Coils & Filters

INDUCTORS/TRANSFORMERS
Chip • Fixed • Variable • Molded
Balun • Inverter Transformers

FILTERS
Multilayer • Dielectric • Ceramic
SAW • Helical • LC • Video

ANTENNAS
Dielectric • Helical

TOKO
Meeting Your Needs

TOKO

INTRODUCTION TO TOKO

Toko is a multinational manufacturer of electronic components with worldwide operations encompassing 20 sales and service offices, 14 manufacturing sites, and 6 R&D facilities. Employing almost 15,000 people, Toko produces over 3.5 billion products annually. In addition, Toko is ranked among the "Top 100 Electronics Companies in Japan" with annual sales topping $500 million. Toko was founded in 1955, and less than one year later introduced the industry's first intermediate frequency transformer (IFT) coil, helping make the transistor radio possible.

Toko's widespread electronics technology spans many fields of technical expertise making Toko a worldwide supplier of electronic components, assemblies and systems, and the world's largest manufacturer of miniature inductor and filter products. Toko enjoys a long established reputation for supplying high quality electronic components to the country's largest and most innovative electronics companies. Looking to the future, Toko America is bringing to market many high quality miniaturized components and integrated circuits for tomorrow's state-of-the-art products.

ABOUT THIS CATALOG

We have compiled this catalog to serve as a single reference source for information on Toko's wide range of coil and filter products. Within these pages you will find complete technical information and specifications on our continually expanding product line.

FOR MORE INFORMATION

We have tried to include all information required to make an informed evaluation of our products within this catalog. For additional clarifications on any product, or to discuss unique product requirements which are not addressed in this catalog, please contact your local Toko America sales office or corporate headquarters. You may also use the tear-out inquiry form in the back of this catalog to fax us a request for additional updated information on any product contained in this catalog.

To reach your local sales office
1-800-PIK-TOKO

Toko America's corporate headquarters
1250 Feehanville Drive
Mount Prospect, Illinois 60056
Phone: 847.297.0070
Facsimile: 847.699.1194

U.S. Sales office listing
Please see back cover of this catalog

International Sales office listing
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To visit our Internet site:
http://www.tokoam.com

TOKO

CUSTOMER SERVICE & SUPPORT

TOKO'S COMMITMENT TO QUALITY

Our commitment to quality products is illustrated by the numerous quality awards we have received from some of the world's largest and most discriminating manufacturers. This commitment is supported throughout every facet of our process, from design through production. At Toko, quality is designed in, built in, verified and delivered. In addition, our extensive research and development program carries forward our never-ending dedication to a higher level of integration, higher performance and overall added value for our customers.

TECHNICAL SUPPORT

Toko's highly skilled engineers have years of experience helping customers meet their design needs. They can help you determine which of our many standard parts will best meet your specifications, or if a simple modification is required. In addition to the data contained in this catalog, additional specifications and test data may be obtained from any regional sales office. Our sales personnel and application engineers offer Toko customers a complete design assistance team.

Toko's characteristic team approach and talent for finding innovative solutions is one of the most important facets of our worldwide organization. Indeed, this technical expertise is one of the major factors in Toko's reputation for integrity and commitment to its customers.

CUSTOMER SERVICE

Everyone promises service, but at Toko we realize it takes more than promises to deliver on our claims. We know it requires a personal commitment from everyone in our sales and support organization, from our sales and marketing staff to our distributor partners. These individuals represent a pool of dedicated professionals, striving to live up to your expectations, and to be the best qualified in the industry to serve you.

ELECTRONIC DATA INTERCHANGE

Toko offers EDI capabilities to all customers. Please contact your local Toko sales office for additional information.

TOKO

ORDERING INSTRUCTIONS

QUOTATIONS

Quotations may be obtained from your nearest Toko sales office or distributor.
Please note that prices are subject to change without notice.

ORDERING SAMPLES

Please contact your local Toko sales office or distributor to facilitate shipment of a product sample as soon as possible.

PROTOTYPING KITS

Toko has available a variety of prototyping kits to assist the design process. A complete listing of these kits is contained in the final chapter of this catalog. Please contact your local Toko sales office to order a prototyping kit.

PLACING AN ORDER

Toko's local sales office will be pleased to provide assistance in selecting the component most appropriate to meet your needs. In the case of a small quantity requirement, orders can also be placed with a Toko authorized distributor. In addition to specifying the complete Toko part number, it is a good practice to specify delivery dates, shipping instructions, contact person's name, application, and estimated annual usage. Please keep in mind that lead times vary depending on quantity. In addition, large orders may be scheduled over time to suit your production schedule.

TERMS

Net 30 days, subject to credit approval.

RETURNS

All returns must be assigned an authorization number from Toko. When returning products for any reason, contact your local sales office or distributor for authorization and instructions.

PRODUCT CHANGES

Although all product specifications contained in this catalog were current at the time it was printed, they are subject to change without notice.

SPECIAL TESTING & LABELING

Special testing, data reporting, labeling and bar coding is available at extra cost.
Specifications should be included in the part's description and will be quoted with the part.

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TOKO

Surface Acoustic Wave (SAW) Filters

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ABOUT SAWS & TOKO

Surface Acoustic Waves (SAW) propagate along the surface, rather than within an elastic substrate as in bulk crystal resonators. The properties of Surface Acoustic Waves make them one of the most versatile technologies commonly used for electronic filters.

Toko uses a quartz crystal substrate which results in superior temperature characteristics. Many years of experience and expertise have resulted in our SAW devices achieving highly accurate frequency characteristics, low insertion loss, and high attenuation characteristics.

Toko first developed SAW technology in 1975, and our filters were first introduced in 1979, mainly for TV IF's. Toko now has design centers in Colorado Springs, Colorado, and in Saitama, Japan that have been specializing in SAW filters for mobile communication and wireless systems.

This catalog describes Toko's latest standard products for the communications market. If you would like further information on any of these parts or have special requirements, please contact your nearest Toko office at 1-800-PIK-TOKO, or visit our website at http://www.tokoam.com.

DESCRIPTION

The SF type SAW filter is a multimode resonator filter, designed primarily as the IF filter for radio communications equipment. These devices feature very low insertion loss and very narrow bandwidths (Q's up to 15,000 are possible). Unlike SAW transversal filters, the resonator filter can have a very narrow bandwidth and low loss in a very small package.

A SAW multimode resonator filter (Figure 1 shows a 2-pole device) is made up of several different elements. The basic element is the single-pole SAW resonator. It consists of 1 SAW transducer placed between two acoustic reflectors. The Q of this structure is determined by its cavity length and aperture. This structure by itself cannot function as a filter, but by combining two single-port resonators together, a two-port resonator filter is made. These can be combined either laterally (perpendicular to the propagation as in Figure 1) or longitudinally (not shown). The two sections in either configuration are coupled acoustically. The lateral coupling (used in the SF filter) allows a very high Q to be designed into the filter.

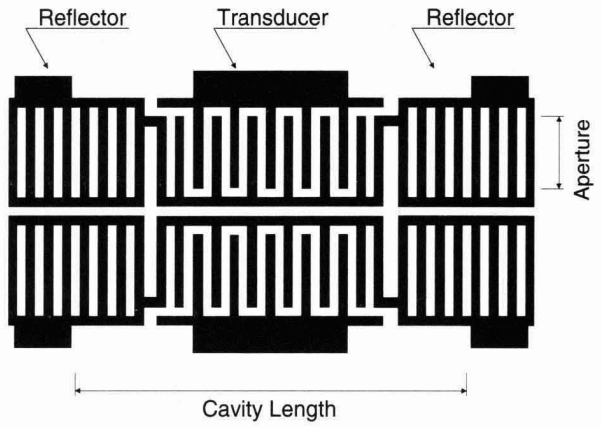


Figure 1: Laterally coupled 2-pole SAW Resonator Filter

The electrical equivalent circuit for such a 2-pole SAW resonator filter is shown in Figure 2. This is identical to that obtained with a discrete ladder filter. Thus, the circuit designer can incorporate the SF filter into his circuit in a way very similar to the ladder filter.

As with other filter technologies, different filter shape factors are often required. The SF filter provides this flexibility by allowing Butterworth or Chebeshev functions to be generated. In addition, 2-pole sections can be combined to generate 4 or 6 pole devices. The close in attenuation is much greater as more poles are added.

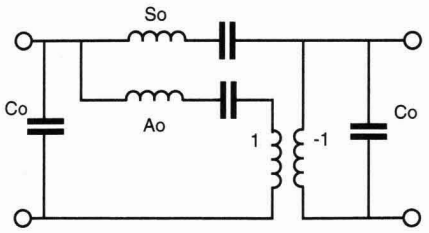


Figure 2: Equivalent Circuit for 2-pole Resonator Filter

The SF SAW filters are fabricated on Quartz to provide excellent temperature characteristics. The center frequency variation is typically less than 100 ppm over the operating temperature range. Figure 4 shows the frequency variation of ST Quartz as a function of temperature, as well as the characteristics of other typical SAW substrates.

The typical performance ranges possible with an SF type SAW filter are shown below in Table 1. The low loss and low ripple specifications are met when the input and output ports are electrically matched. Please see page 3 for a typical matching circuit.

Center Frequency	70.0 – 450.0 MHz
Bandwidth	0.02 – 0.10 %
Insertion Loss	2.0 – 5.0 dB
Ultimate Rejection	70 dB
Amplitude Ripple	0.1 – 1.0 dB
Group Delay Ripple	0.1 – 10μsec
Maximum Input Power	+10 dBm
Material	ST Quartz

Table 1: Typical Specification Ranges

EXAMPLE APPLICATION OF SF FILTER

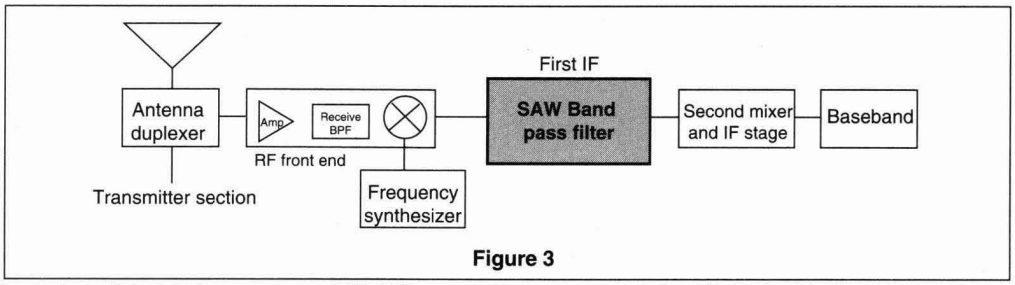


Figure 3

In a typical cellular telephone system, a SAW IF filter screens out unwanted spurious signals from the first IF mixer.

DESCRIPTION

The SA type SAW devices manufactured by Toko are transversal type filters. Manufactured using new low loss techniques, these filters have lower loss than traditional transversal filters, at the same time maintaining low in-band and group delay ripple.

Single Phase Unidirectional Transducers (SPUDT) are used to reduce the device insertion loss. These structures have the potential for improving the insertion loss by 6 dB (3 dB from each transducer). In addition, the transducer to transducer reflections (commonly referred to as Triple Transit Signals or TTS) can be significantly reduced. These TTS signals are the primary cause of passband and group delay ripple. Thus, with proper matching, these filters can have low loss and low ripple simultaneously.

SPUDT filters allow wider bandwidths than can be achieved with resonator filter technology. Table 2 below shows the typical range of values that can be achieved. The narrowest filters use Quartz for the substrate, while the wider filters require LiTaO3 or LiNbO3 to achieve the lowest possible loss.

An advantage of using Quartz as the substrate is that it has better temperature characteristics (see Figure 4). Higher coupling materials, such as LiTaO3 have a much larger frequency variation with temperature. This makes them usable only for wider bandwidth devices.

Parameter	Typical Values
Center Frequency	30 - 250 MHz
Bandwidth	0.2 - 20 %
Insertion Loss	6.0 - 20.0 dB
Ultimate Rejection	55 dB
Amplitude Ripple	0.1 - 1.0 dB
Group Delay Ripple	0.2 - 1.0 µsecs
Maximum Input Power	+10 dBm
Material	Quartz

Table 2: Typical Specification Ranges

Like all transversal filters, it is easy to incorporate a weighting function into the design to create the required passband shape and rejection level. Figure 5 compares a filter with unweighted transducers, and one obtained using a simple weighting technique. The unweighted response may be adequate for many applications, but as is shown, the rejection may be improved by an appropriate weighting of the design.

A wide range of devices can be built using transversal techniques. Please contact a Toko Representative with your specific requirements.

Figure 4:

Temperature Sensitivity of Industry-wide SAW Materials

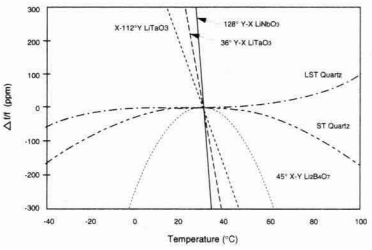
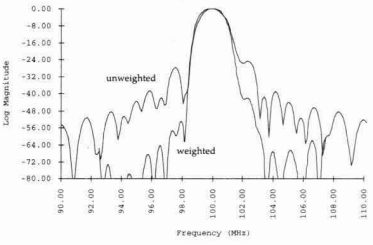


Figure 5:

Frequency Response of Weighted vs. Unweighted Transducers



ELECTRICAL MATCHING CIRCUIT

In order for the device to meet the specifications stated (including insertion loss, passband ripple and group delay ripple), it must be correctly matched at both its input and output ports. Figure 6 shows a typical matching circuit configuration for a 50Ω system and a "W" style package. Other package types will have a similar topology using the appropriate input and output connections.

The Toko data sheets show the values of matching components that are required to match the device in the Toko test fixture. Since the electrical match is highly dependent on circuit topology, the specific values required in your circuit may differ from those shown. Exact loading impedances are available on each device data sheet. Please contact Toko directly if you have any questions or problems relating to the proper electrical match of any specific part.

Note: Other matching circuit configurations, including differential feed, are possible, please contact Toko for details.

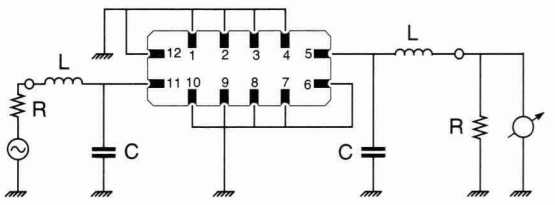


Figure 6: Typical Matching Circuit for W Package

STANDARD PART NUMBER LIST

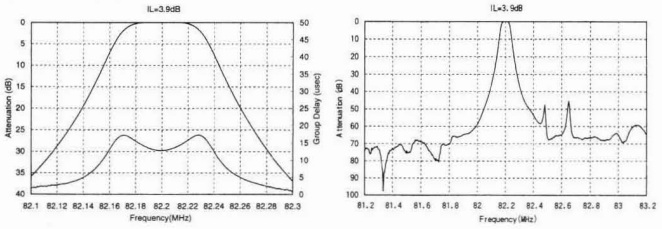
ELECTRICAL CHARACTERISTICS TA = 25°C. Detailed specifications for each p/n are available from Toko.

TYPE SF (NARROW BAND IF FILTERS)

Typical Applications	TOKO Part Number	Center Frequency (MHz)	Bandwidth 3dB (kHz min)	Attenuation (dBmin) @fo±MHz	Attenuation (dBmin) @fo-910kHz	Ripple (dBmax)	Group Delay Variation (µsec max)	Insertion Loss (dB max)	Operating Temp. Range (°C)	Package Style
AMPS/ IS-136	SF082HS-004	82.20	±15	9@fo±60	65	1.0	10	6	-30~+80	H
	SF082WA-001	82.20	±20	15@fo±60	70	1.0	8.0	5.0	-30~+80	W
	SF083HS-020	83.16	±15	12@fo+60	65	1.0	10.0	5.0	-30~+80	H
	SF083TS-011	83.16	±15	25@fo±60	70	1.0	10.0	5.0	-30~+80	T
	SF083WA-001	83.16	±15	20@fo±60	70	1.0	10.0	5.0	-30~+75	W
	SF083WA-002 (Balanced I/O)	83.16	±15	15@fo±60	32(±3.6MHz)	1.0	10.0	5.0	-30~+80	W
	SF085HS-009	85.38	±15	25@fo±60	45	1.5	10.0	5.0	-30~+80	H
	SF085WD-001	85.38	±15	14@fo±60	65	1.5	10.0	5.0	-30~+80	W
	SF086HS-005	86.46	±15	15@fo±60	40@fo±400	1.0	10.0	5.0	-20~+70	H
	SF086HS-008	86.85	±15	15@fo±60	65	1.0	10.0	6.0	-30~+80	H
	SF086WA-001	86.85	±15	10@fo±60	70	1.0	6.0	4.0	-30~+80	W
	SF109WS-007	109.65	±30	15@fo±100	55	1.0	5.0	5.0	-20~+70	W
	SF148XB-002	148.05	±12.5	30@fo±120	60	0.5	10.0	5.0	0~+70	X
GSM/PCS	SF225ZA-001	225.00	±85	20@fo±500	40	1.0	3.0	9.0	-10~+60	Z
	SF246ZA-019	246.00	±80	25@fo±500	40	1.0	3.0	8.5	-10~+60	Z
PDC	SF128YD-001	128.90	±19	25@fo±100	72	1.0	5.0	5.0	-20~+85	Y
	SF130YD-015	130.05	±19	25@fo±100	72	0.5	5.0	5.0	-20~+75	Y
	SF130YD-016	130.00	±19	30@fo±100	72	0.5	5.0	5.0	-20~+75	Y
	SF130ZA-001	130.00	±19	20@fo±100	72	0.5	5.0	5.0	-20~+75	Z
	SF147YD-003	147.55	±19	23@fo±100	72	1.7	5.0	5.0	-20~+75	Y
PHS/MCS	SF243ZA-003	243.95	±110	30@fo±600	40(±1.2MHz)	1.0	3.0	9.0	-10~+60	Z
	SF248ZA-003	248.45	±110	30@fo±600	40(±1.2MHz)	1.0	3.0	9.0	-10~+60	Z
RF Data	SF390ZA-001	390.00	±220	20@fo±800	38@fo-1500 40@fo+1500	1.0	2.0	9.0	-10~+60	Z
General	SF090HS-004	90.00	±15	15@fo+60	65	1.5	10.0	6.0	-30~+80	H
	SF090TS-002	90.00	±15	15@fo±60	65	1.5	6.0	5.0	-30~+80	T

TYPICAL CHARACTERISTICS

SF082HS-004



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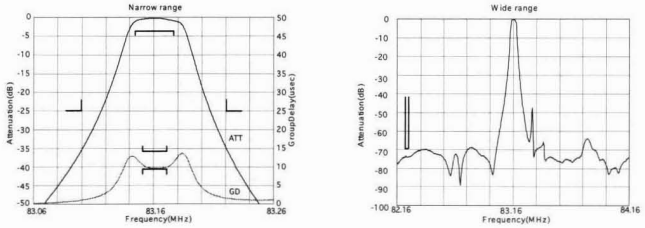

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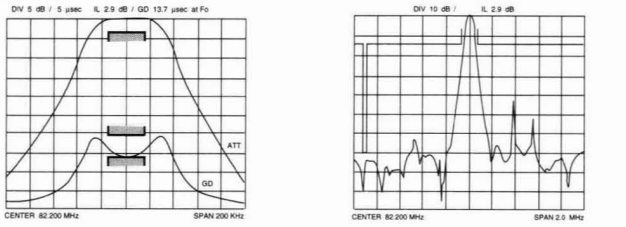

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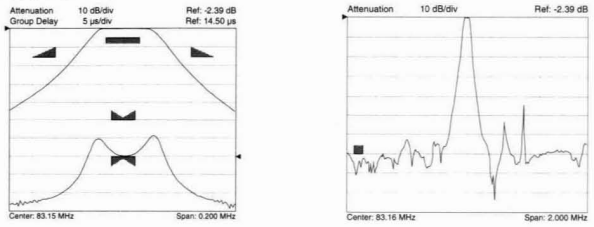

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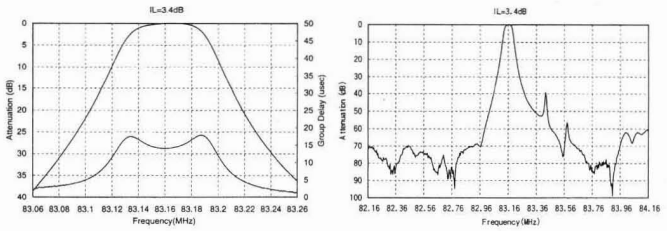

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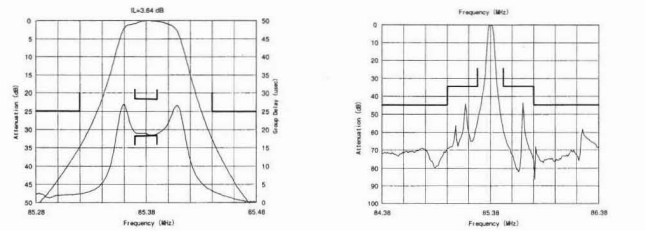
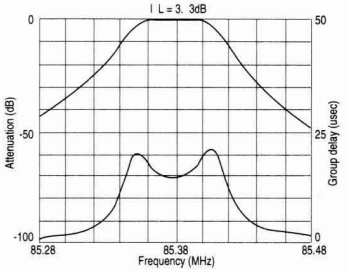
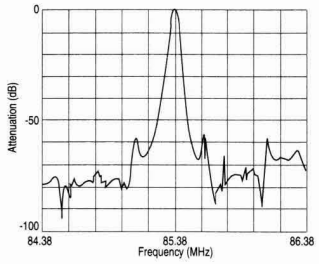


TYPICAL CHARACTERISTICS

SF085WD-001





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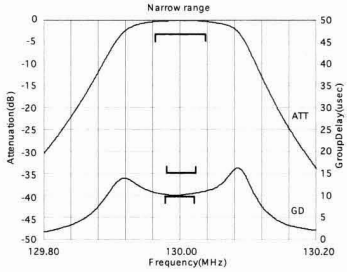

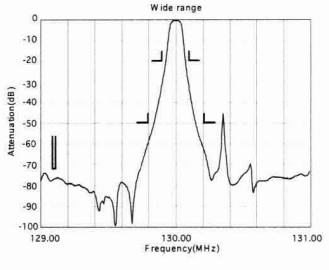

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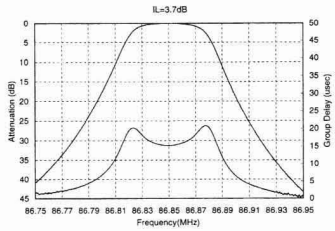

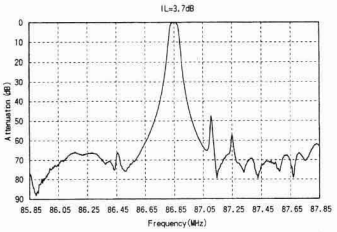

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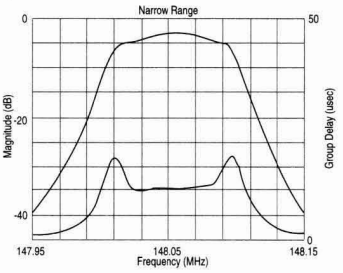

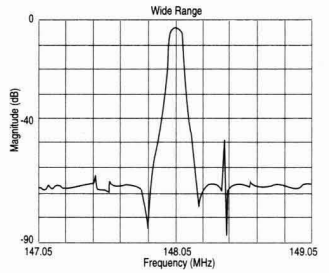

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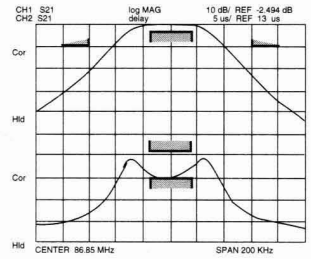

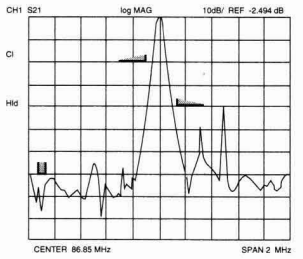

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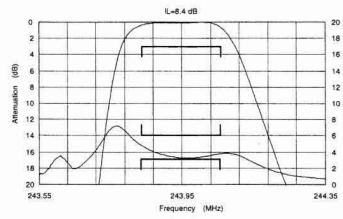

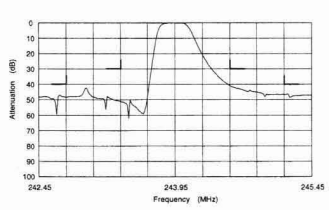

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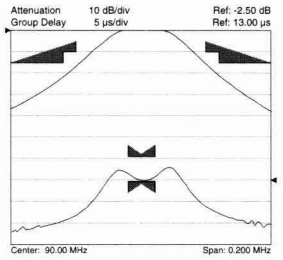

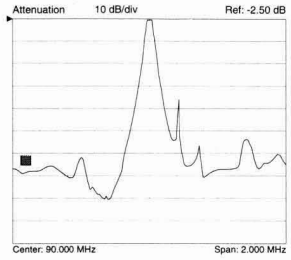

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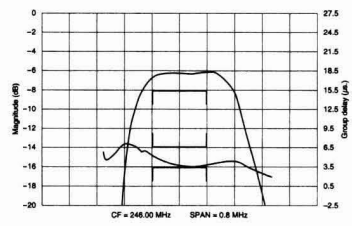

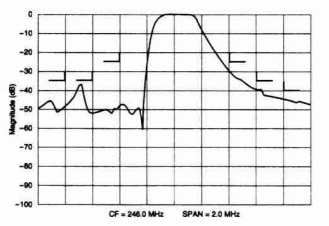

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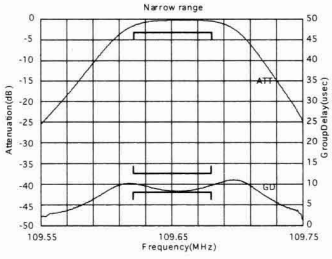

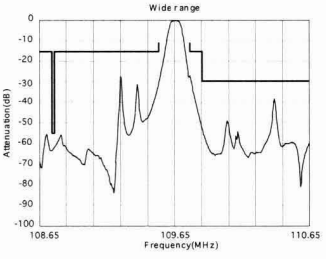

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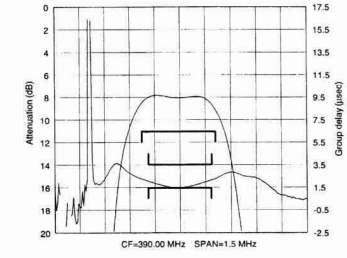
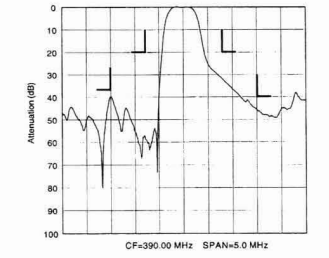




STANDARD PART NUMBER LIST

ELECTRICAL CHARACTERISTICS TA = 25°C. Detailed specifications for each p/n are available from Toko.

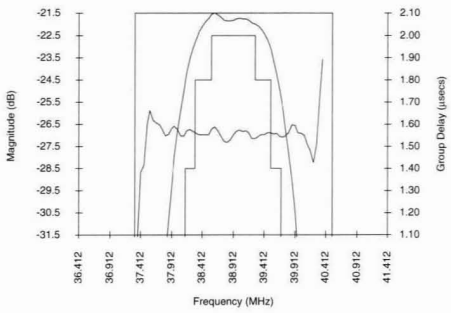
TYPE SA (WIDE BAND IF FILTERS)

Typical Applications	TOKO Part Number	Center Frequency (MHz)	Bandwidth 3dB (kHz min)	Attenuation (dBmin) @fo±MHz	Attenuation (dBmin) @fo±MHz	Ripple (dBmax)	Group Delay Variation (µsec max)	Insertion Loss (dB max)	Operating Temp. Range (°C)	Package Style
CDMA	SA085LS-011	85.38	±630 (6dB)	30@fo±0.90	-	0.7	2.0°RMS(1)	17.0	-30~+80	L
	SA210WA-001	210.38	±630 (5dB)	33@fo±1.25	-	1.2	2.5°RMS(1)	10.5	-30~+80	W
	SA130ZA-004	130.38	±630	25@fo+1.98	40@fo±250	1.0	7°RMS(1)	12.0	-30~+80	Z
GSM	SA153WA-004	153.00	±75	20@fo±0.80	30@fo±1.5	2.0	1.00	7.0	-20~+70	W
RF Data	SA070WA-010	70.00	±575	40@fo±1.75	45@fo±4.0	0.5	0.25	17.0	-20~+70	W
	SA240WA-001	240.192	±650	15@fo±1.728	40@fo±2.88	1.0	0.35	9.0	-10~+60	W
DAB	SA038WA-008	38.91	±610	38@fo±1.6	-	0.7	0.10	25.0	+25	W
General	SA200HS-004	200.00	±2500	40@fo±5	50@fo±20	1.0	0.06	20.0	-20~+70	H

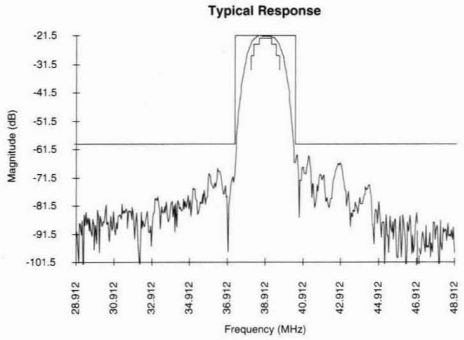
Note: (1) Phase linearity

SA038WA-008

Passband

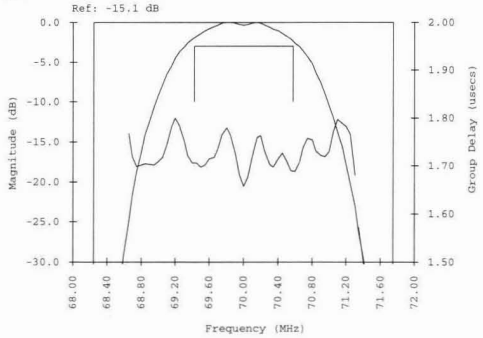


Wideband

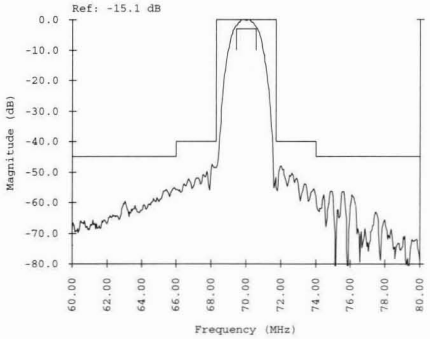


SA070WA-010

Passband

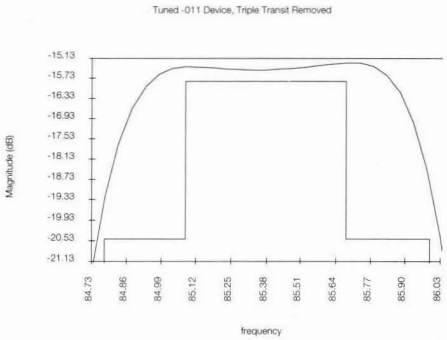


Wideband



SA085LS-011

Passband



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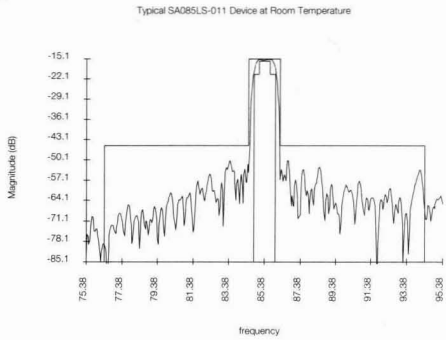
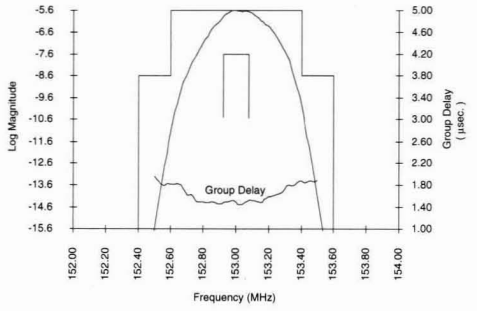


SA153WA-004

Passband



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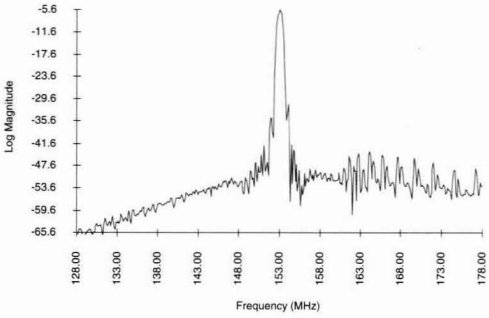
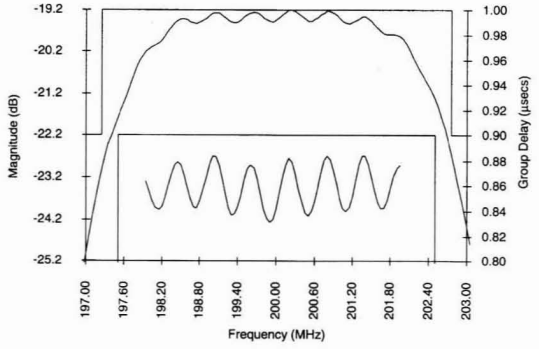


SA200HS-004

Passband



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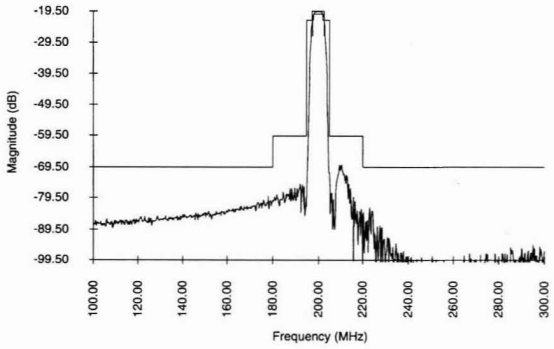
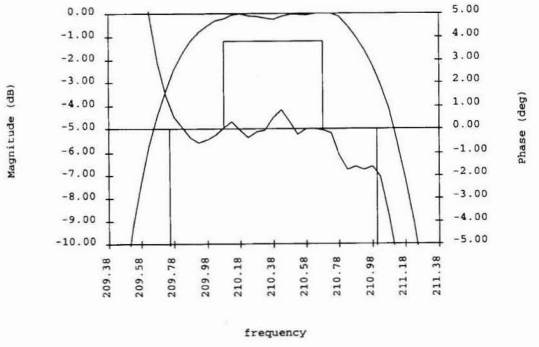


SA210WA-001

Passband



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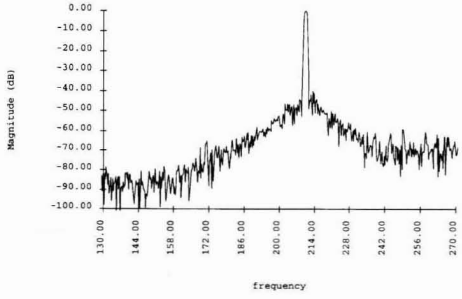
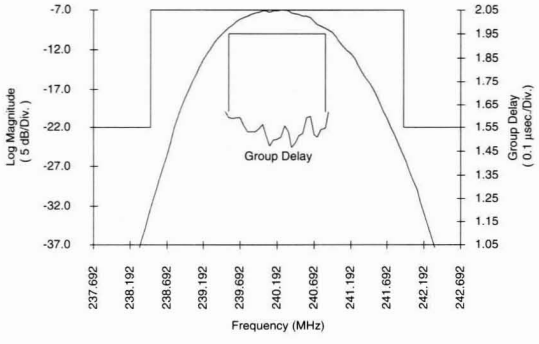


SA240WA-001

Passband



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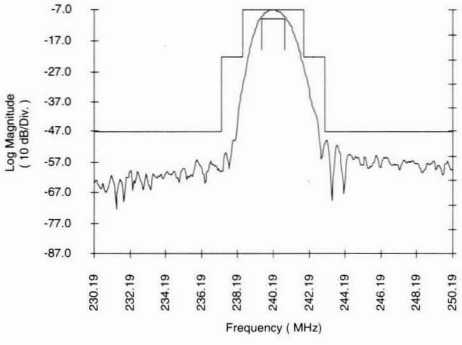

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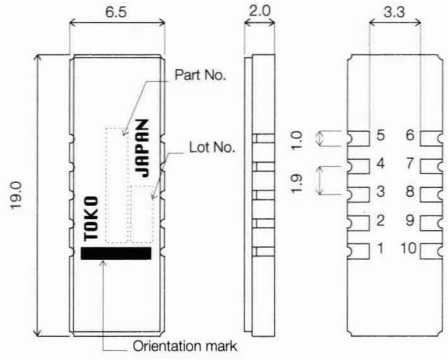

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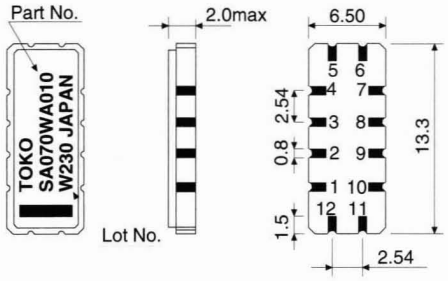

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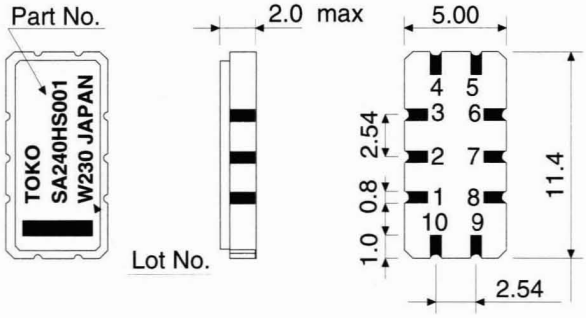

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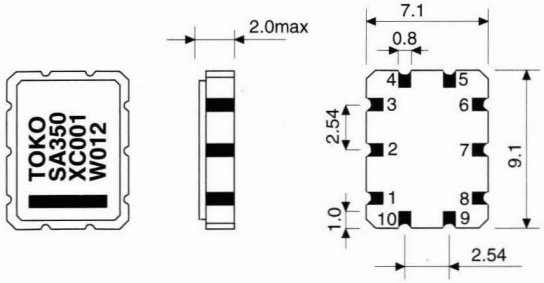

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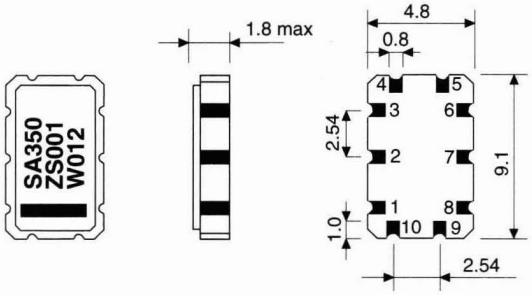

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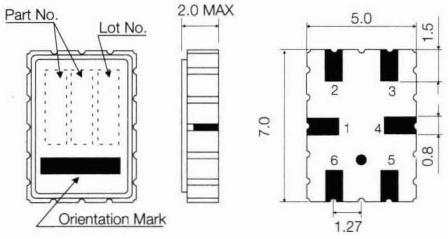
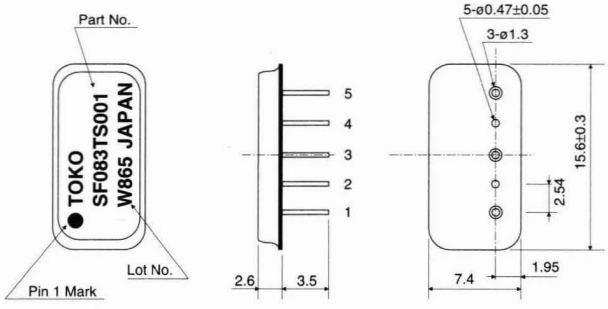


Style T

Unit: mm



Dielectric Filters

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6DPD 23
6DPH 24
6DPK 25

TOKO dielectric resonator filters are the high "Q" type constructed of high dielectric constant ceramic material. The filters are formed by coupling the ceramic sections (poles). TOKO designs are available in two through five poles. The selectivity of the filter increases with additional poles. The lowest loss is provided with the two pole design and increases slightly with each additional pole.

These are fixed tuned devices and the TOKO manufacturing process provides excellent repeatability. Since they are of a simple design with no moving parts they provide excellent mechanical stability and reliability. Their low loss and compact design make these filters ideally suited as the band pass filter and antenna duplexer in high frequency communication equipment.

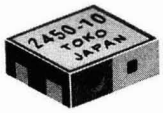
TOKO filters are available in the frequency range from 700 to 2500MHz. They provide an excellent alternative to cavity filters, SAW filters, and helical filters. TOKO has developed standard parts particularly for cellular phones, band-spread spectrum receivers, loran, global positioning systems (GPS) and the new generation of cordless phones (CT2, PHP).

		2-pole	3-pole	4-pole	5-pole
FILTERS	PIN	6DFA	6DFB	6DFC 6DFSC	6DFSD
	SMD	4DFA	4DFB	—	—
	CHIP	TDF_A	TDF_B	—	—

	TYPE	6DPD	6DPH	6DPK
DUPLEXERS	Rx (Receiving)	2-pole	4-pole	5-pole
	Tx (Transmitting)	2-pole	3-pole	4-pole

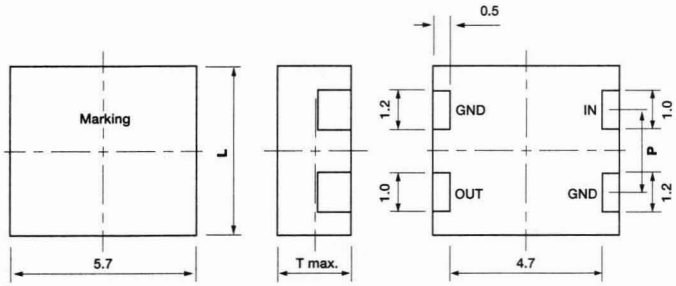
TYPE TDF (2 POLE SMD)

Frequency Range: 800-2500MHz



OUTLINE DIMENSIONS

TDF (2-Pole)



Unit: mm

Features

- Low profile design
- Excellent out of band attenuation
- Packaged on tape/reel, reflow solderable
- Well suited for PCMCIA cards
- 50Ω input/output impedance

HEIGHT BY TYPE

Type	# Poles	Height: T Max. (mm)
TDF2A	2	2.25
TDF3A	2	3.0

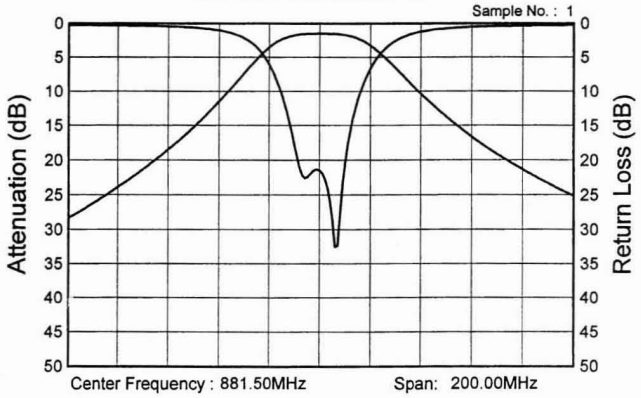
STANDARD PART NUMBER LIST

TYPE TDF (2 Pole)

TOKO Part Number	Poles	Fo (MHz)	BW (fo ± MHz Min)	I.L. (dB Max)	VSWR	Length (L mm)	Pin Pitch (P mm)	Selectivity (dB min @ MHz)	Application
TDF2A-836E-10	2	836.5	12.5	2.7	2.0	9.9	4.5	6 (Fo ±32.5)	AMPS
TDF2A-881E-10	2	881.5	12.5	2.7	2.0	9.4	4.5	6 (Fo ±32.5)	AMPS
TDF3A-1280H-10	2	1280.0	20.0	2.0	2.0	6.1	3.0	26 (Fo - 100)	RADIO
TDF2A-1575B-11	2	1575.4	5.0	5.5	2.3	5.4	2.5	22 (Fo ±50)	GPS
TDF2A-1575B-12	2	1575.4	5.0	2.7	2.0	5.2	2.5	30, 28 (Fo -140, +140)	GPS
TDF2A-1575B-13	2	1575.4	5.0	1.0	2.0	5.2	2.0	7 (Fo ± 140)	GPS
TDF3A-1575B-10	2	1575.4	5.0	3.0	2.2	5.4	2.5	28, 26 (Fo -140, +140)	GPS
TDF3A-1907E-18	2	1907.0	12.5	0.75	1.5	6.1	3.0	45, 9 (Fo -485, +235)	PHS
TDF3A-1907E-19	2	1907.0	12.5	0.7	1.5	5.9	2.5	35, 5 (Fo -485, +235)	PHS
TDF2A-2442A-11	2	2442.0	2.0	4.3	2.0	5.2	2.5	15 (Fo ±60)	RF LAN
TDF2A-2450T-10	2	2450.0	50.0	2.0	2.0	5.1	2.5	20, 16 (Fo -280, +280)	RF LAN
TDF2A-2484A-10	2	2484.0	2.0	4.3	2.0	5.2	2.5	15, 20 (Fo ±60, ±90)	RF LAN
TDF2A-2484E-11	2	2484.0	13.0	3.0	1.6	5.1	3.0	35, 30 (Fo ±350, ±700)	RF LAN
TDF2A-2484E-12	2	2484.0	13.0	2.0	1.6	5.1	3.0	25, 30 (Fo ±350, ±700)	RF LAN
TDF2A-2500A-12	2	2500.0	2.0	5.0	2.0	5.2	3.0	20, 25 (Fo ±60, ±90)	VICS

TYPICAL CHARACTERISTICS

Toko No. : TDF2A-881E-10



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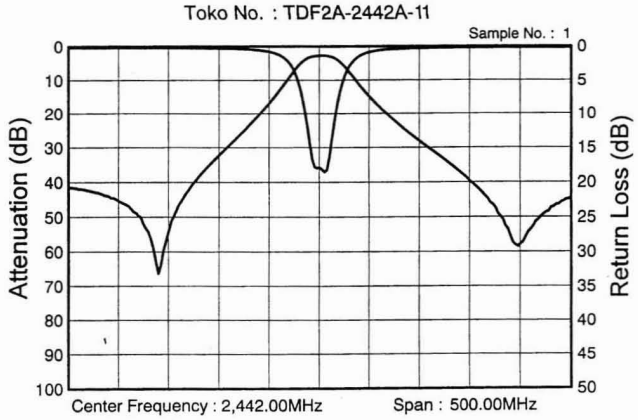

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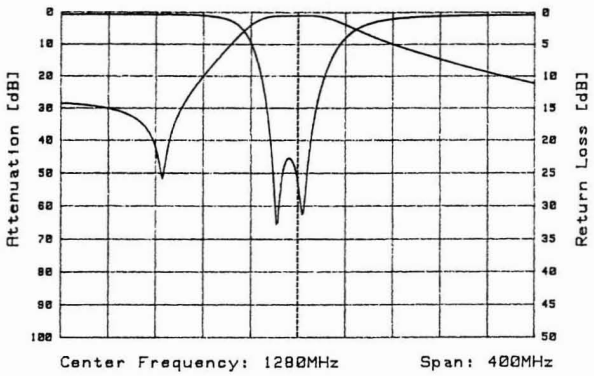
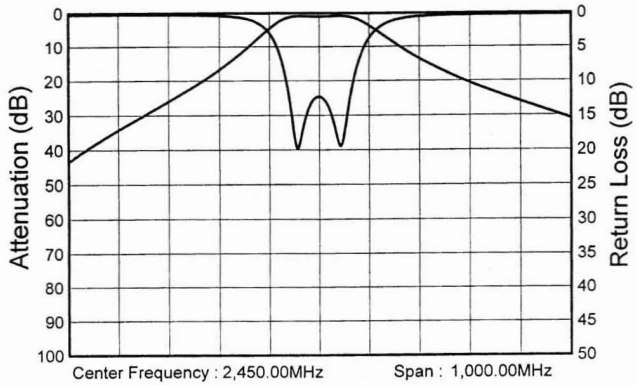
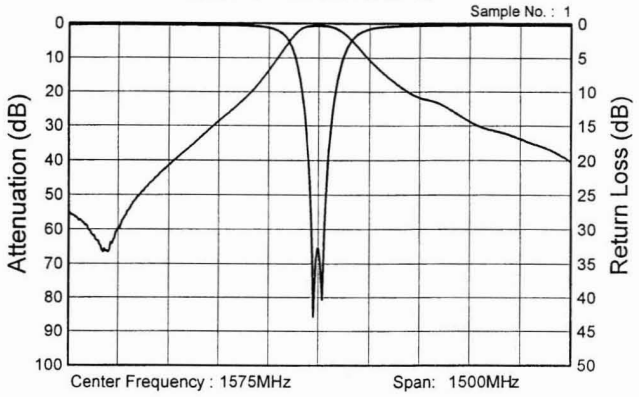


Toko No. : TDF2A-2450T-10



Toko No. : TDF2A-1575B-13



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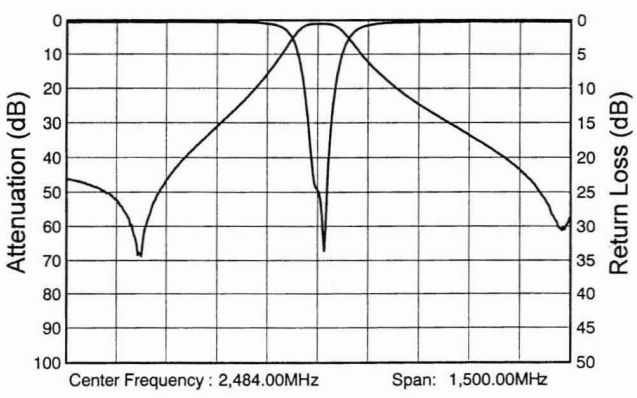
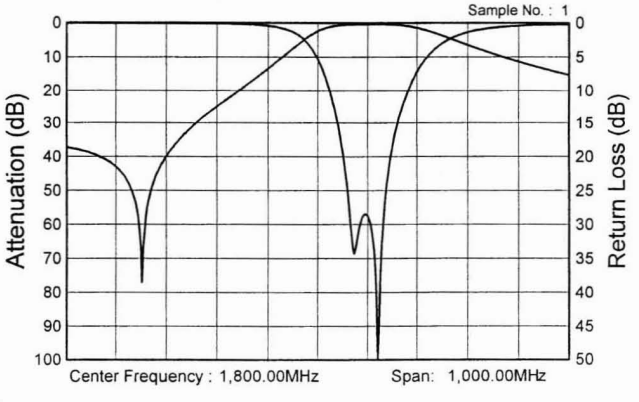
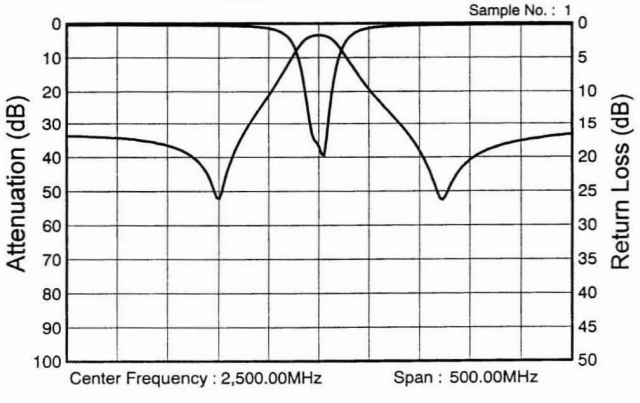


Toko No. : TDF3A-1907E-19

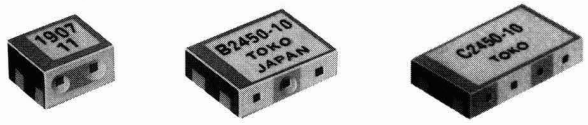


Toko No. : TDF2A-2500A-12



TYPE TDFM (2, 3, 4 POLE SMD)

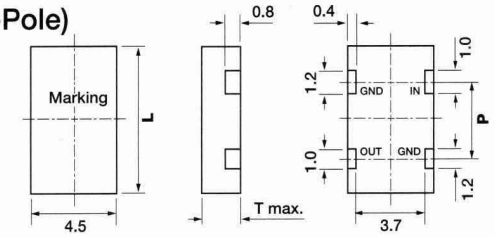
Frequency Range: 800-2500MHz



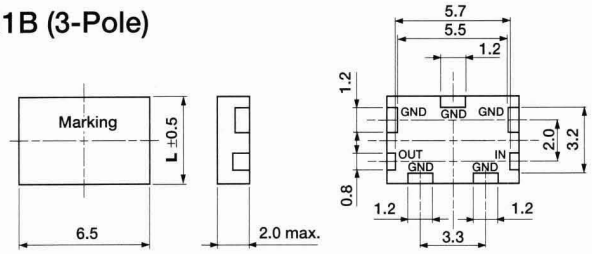
Features

- Available in 2, 3, or 4 pole design
- Miniature low profile SMD package
- 50Ω input/output impedances
- Packaged on tape/reel, reflow solderable

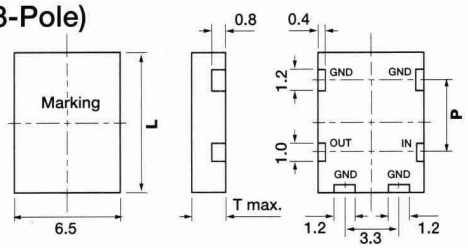
TDFM (2-Pole)



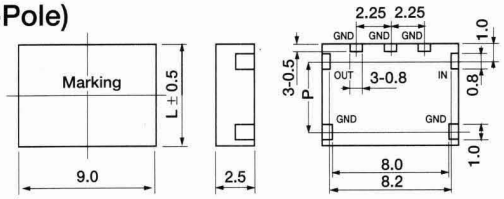
TDFM1B (3-Pole)



TDFM2B (3-Pole)



TDFM (4-Pole)



HEIGHT BY TYPE

Type	# Poles	Height: T Max. (mm)
TDFM1A	2	2.0
TDFM1B	3	2.0
TDFM2A	2	2.25
TDFM2B	3	2.25
TDFM3A	2	2.8
TDFM3C	4	2.8

STANDARD PART NUMBER LIST

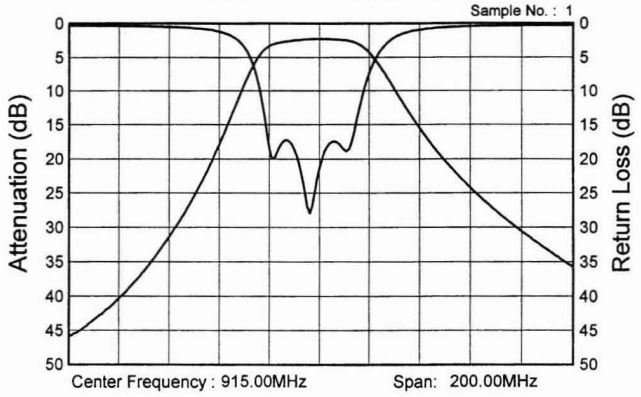
Unit: mm

TYPE TDFM (2, 3 and 4 Pole)

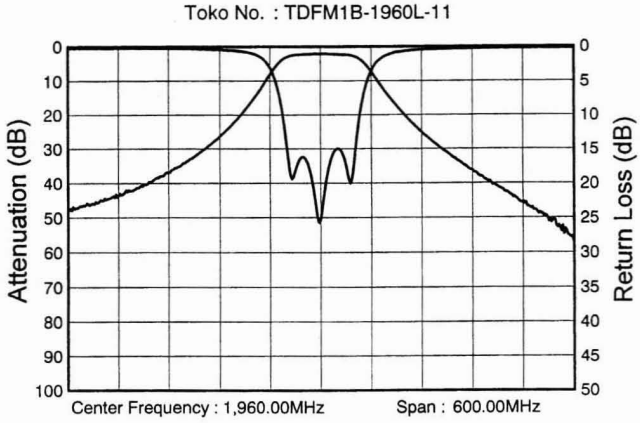
TOKO Part Number	Poles	Fo (MHz)	BW (fo ± MHz Min)	I.L. (dB Max)	VSWR	Length (L mm)	Pin Pitch (P mm)	Selectivity (dB min @ MHz)	Application
TDFM2A-915E-10	2	915.0	13.0	3.0	2.0	7.7	4.0	12 (Fo ±50)	900 ISM
TDFM2B-915E-10	3	915.0	13.0	3.5	2.0	7.9	4.0	18 (Fo ±50)	900 ISM
TDFM1A-930A-12	2	930.5	1.5	3.5	2.0	7.5	-	40 (Fo -90)	PAGER
TDFM2A-1575A-10	2	1575.4	1.0	3.2	2.0	5.25	2.5	30, 28 (Fo -140, +140)	GPS
TDFM2A-1575A-11	2	1575.4	1.0	5.5	2.3	5.2	2.0	22 (Fo -50)	GPS
TDFM1B-1747O-11	3	1747.5	37.5	3.2	2.0	4.75	2.0	25 ,25 (Fo ±160, ±240)	PCN
TDFM1B-1842O-11	3	1842.5	37.5	3.2	2.0	4.5	2.0	8, 25 (Fo ±80, ±160)	PCN
TDFM1B-1880L-11	3	1880.0	30.0	3.2	2.0	4.4	2.0	34, 39 (Fo ±190, ±240)	PCS
TDFM3A-1890D-16	2	1890.0	10.0	1.8	2.0	6.2	4.0	30, 5 (Fo -216, - 48)	DECT
TDFM3A-1890D-17	2	1890.0	10.0	2.5	2.0	6.1	4.0	37, 7.5 (Fo -216, -48)	DECT
TDFM3A-1890D-18	2	1890.0	10.0	3.0	2.0	6.3	4.0	24, 20 (Fo -104, +113)	DECT
TDFM3A-1907E-10	2	1907.0	12.5	1.0	1.5	3.8	2.0	40, 10 (Fo -485, +235)	PHS
TDFM3A-1907E-11	2	1907.0	12.0	1.6	1.5	3.8	2.0	35, 20 (Fo -485, +235)	PHS
TDFM1B-1920V-10	3	1920.0	70.0	2.0	2.0	4.1	2.0	25 (Fo -350, +780)	PCS
TDFM2A-1920D-10	2	1920.0	10.0	3.0	2.0	4.3	2.5	33, 27 (Fo -170, +170)	PCS
TDFM1B-1960L-11	3	1960.0	30.0	3.2	2.0	4.2	2.0	34, 39 (Fo ±190, ±240)	PCS
TDFM3C-1960L-10	4	1960.0	30.0	4.0	2.0	6.4	4.5	10 (Fo ±50)	PCS
TDFM1A-2450T-10	2	2450.0	50.0	2.0	2.0	5.2	3.0	20, 16 (Fo -280, +280)	RF LAN
TDFM1B-2450T-10	3	2450.0	50.0	2.3	2.0	5.1	2.5	24, 30 (Fo -190, +350)	RF LAN
TDFM1C-2450T-10	4	2450.0	50.0	3.0	2.0	5.15	-	26, 37 (Fo ±150, ±200)	RF LAN
TDFM1A-2484E-10	2	2484.0	13.0	2.0	2.0	5.1	3.0	25,30 (Fo ±350, ±700)	RF LAN
TDFM1A-2484E-11	2	2484.0	13.0	3.0	2.0	5.2	3.0	35, 30 (Fo ±350, ±700)	RF LAN

TYPICAL CHARACTERISTICS

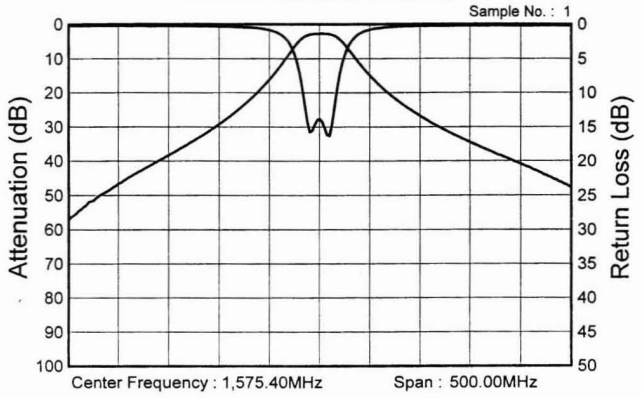
Toko No. : TDFM2B-915E-10



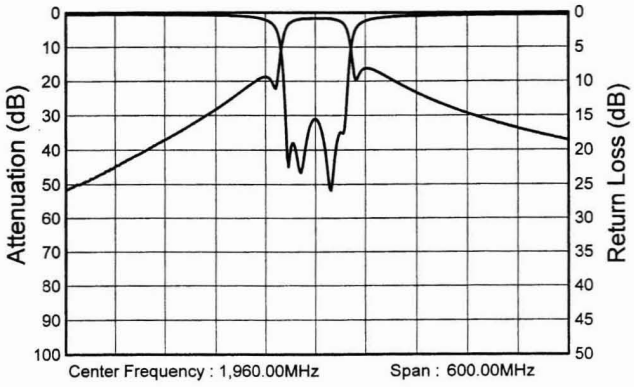
Toko No. : TDFM1B-1960L-11



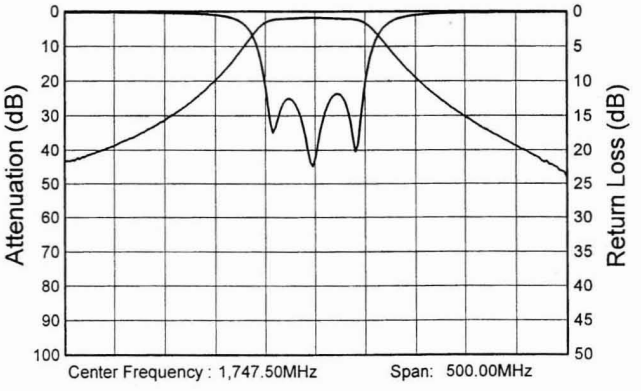
Toko No. : TDFM2A-1575A-10



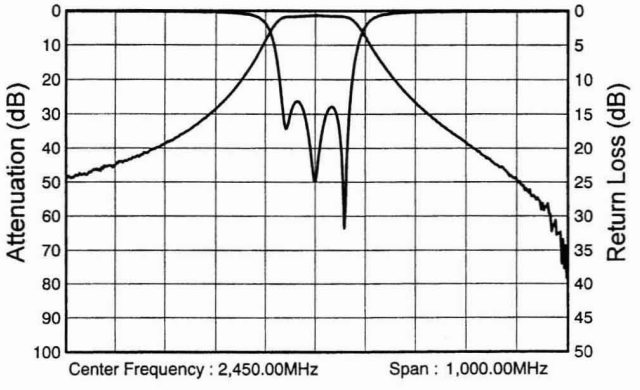
Toko No. : TDFM3C-1960L-10



Toko No. : TDFM1B-1747O-11



Toko No. : TDFM1B-2450T-10



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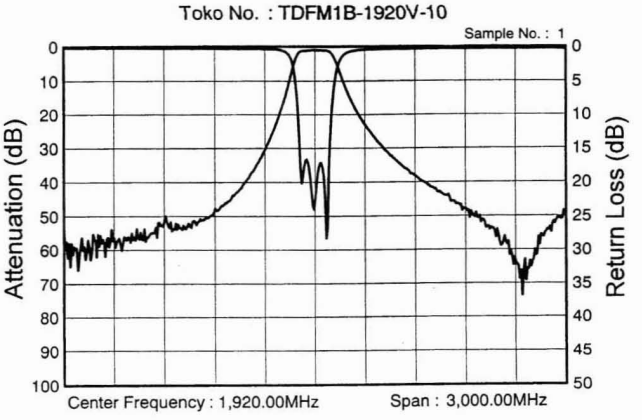
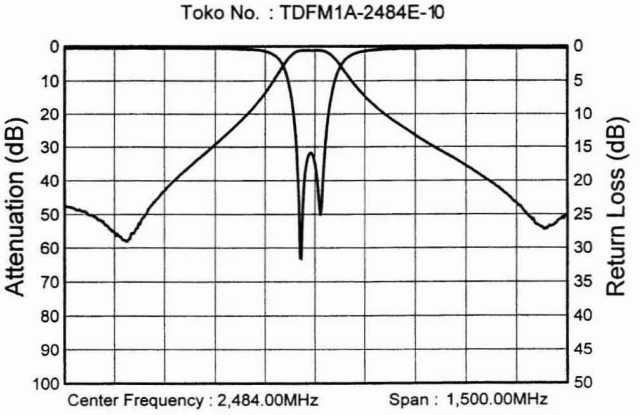
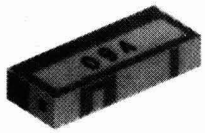


Toko No. : TDFM1A-2484E-10



TYPE TDFS (2 POLE SMD)

Frequency Range: 800-2500MHz

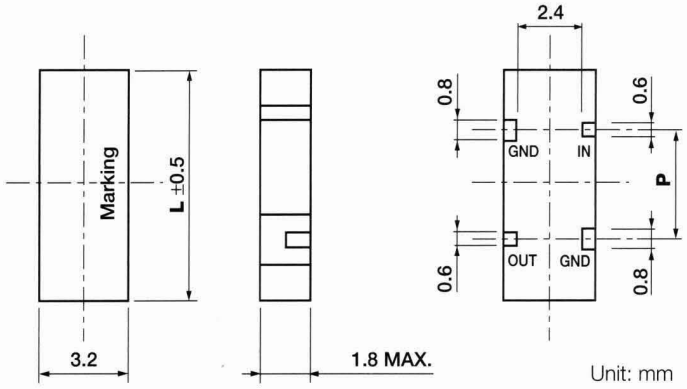


Features

- Extreme low profile design: 1.8mm max
- Excellent out of band attenuation
- Packaged on tape/reel, reflow solderable
- Well suited for PCMCIA cards
- 50Ω input/output impedance

OUTLINE DIMENSIONS

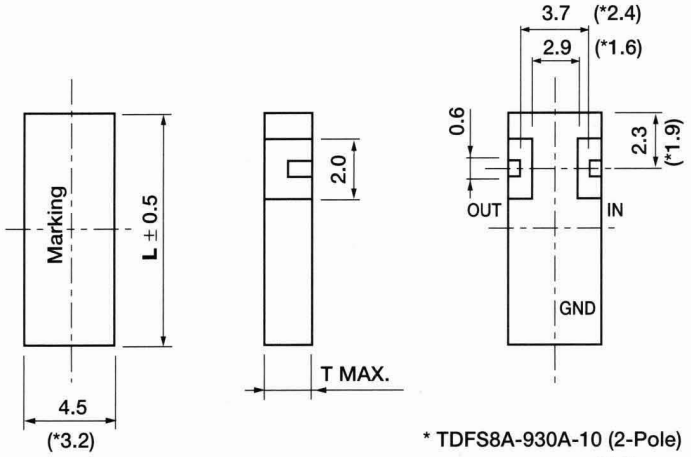
TDFS (2-Pole)



Unit: mm

OUTLINE DIMENSIONS

TDFS (2-Pole/3-Pole)



* TDFS8A-930A-10 (2-Pole)

Unit: mm

HEIGHT BY TYPE

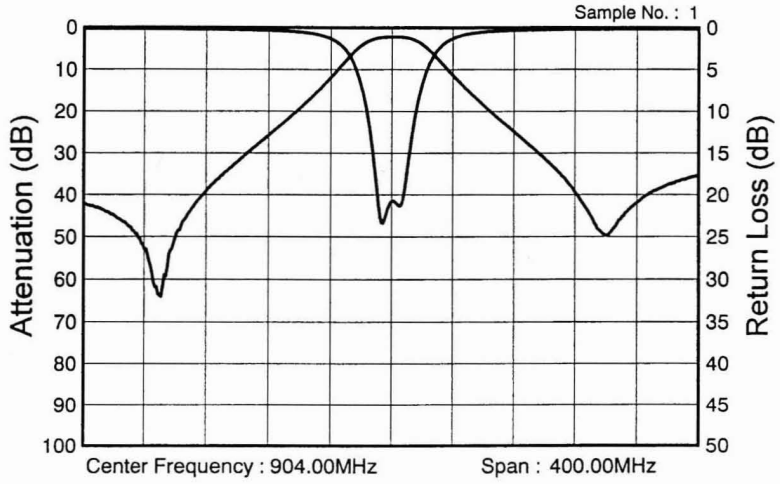
Type	# Poles	Height: T Max. (mm)
TDFS8A	2	1.8
TDFS1B	3	2.0

STANDARD PART NUMBER LIST

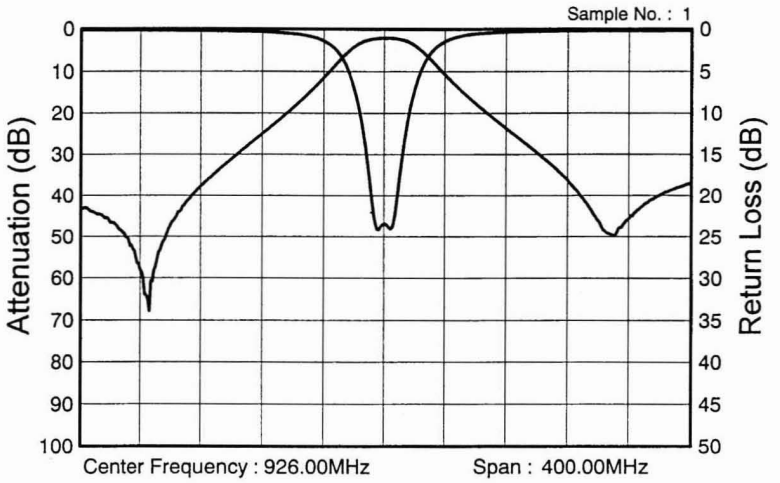
TYPE TDFS (2 Pole)

TOKO Part Number	Poles	Fo (MHz)	BW (fo ± MHz Min)	I.L. (dB Max)	VSWR	Length (L mm)	Pin Pitch (P mm)	Selectivity (dB min @ MHz)	Application
TDFS8A-904A-11	2	904.0	1.0	3.0	2.0	8.5	3.5	40 (Fo ±140)	900 CT
TDFS8A-926A-11	2	926.0	1.0	3.0	2.0	8.3	3.5	40 (Fo ±140)	900 CT
TDFS8A-930A-10	2	930.5	1.5	3.5	2.0	7.8	-	40(Fo±90)	PAGER
TDFS8A-915E-10	2	915.0	13	3.2	2.0	8.3	3.5	17,25(Fo±77.5)	ISM-915
TDFS1B-915E-10	3	915.0	13	4.5	2.0	8.3	-	25,32(Fo±77.5)	ISM-915

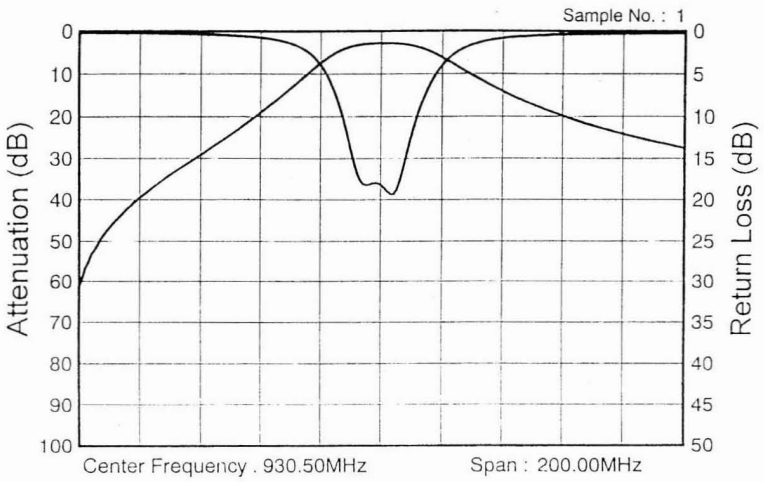
TYPICAL CHARACTERISTICS
TDFS8A-904A-11



TYPICAL CHARACTERISTICS
TDFS8A-926A-11

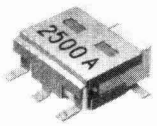


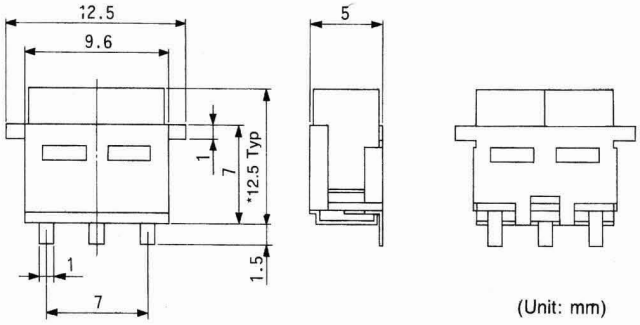
TYPICAL CHARACTERISTICS
TDFS8A-930A-10



TYPE 4DFA (2 Pole SMD Type)

Frequency Range: 800-2500MHz
Temperature Range: –25°C to +85°C





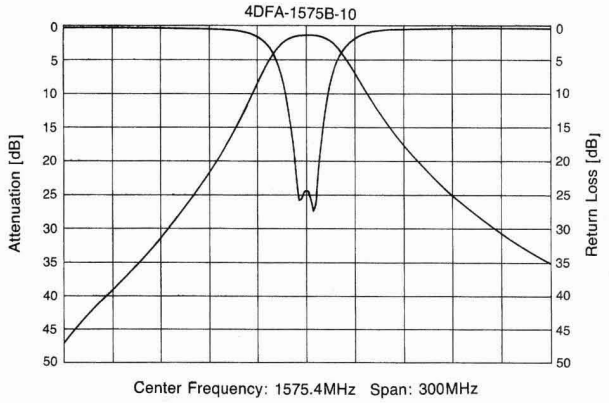
* Depends on center frequency

(Unit: mm)

Measurement values: **4DFA-1575B-10**

Passband Insertion Loss	1.42dB Max.
Passband Ripple	0.12dB
Passband V.S.W.R.	1.13 Max.
Attenuation	
at 1540.4MHz	11.3dB
at 1610.4MHz	8.9dB
at 1435.4MHz	44.2dB
at 1715.4MHz	33.9dB

Characteristics



STANDARD DEVICES SELECTION GUIDE

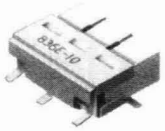
The Part Numbers shown in the table below are standard devices which are readily available. TOKO will design and manufacture modified and custom devices with specific characteristics to meet your requirements. If you do not find the device for your application in this catalog, please contact our sales office or representative office.

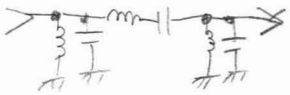
TYPE 4DFA: SMD 2 Pole Designs

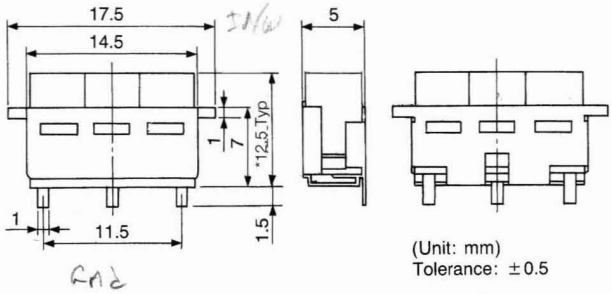
Part Number	Center Freq. (MHz)	Bandwidth (Fo ± MHz)	I.L. (dB max.)	Ripple (dB max.)	VSWR in BW	Selectivity dB min. @ MHz	Application
4DFA-836E-10	836.5	± 12.5	2.0	1.0	2.0	18(Fo ± 77.5)	Cellular-AMPS/TDMA/CDMA
4DFA-881E-10	881.5	± 12.5	2.0	1.0	2.0	18(Fo ± 77.5)	Cellular-AMPS/TDMA/CDMA
4DFA-964E-10	964.0	± 12.5	2.0	1.0	2.0	18(Fo ± 77.5)	Cellular-AMPS/TDMA/CDMA
4DFA-902E-10	902.5	± 12.5	2.5	1.0	2.0	18(Fo ± 77.5)	Cellular-NMT/GSM
4DFA-947E-10	947.5	± 12.5	2.5	1.0	2.0	18(Fo ± 77.5)	Cellular-NMT/GSM
4DFA-866A-10	866.0	± 2.0	3.0	1.0	2.0	30(Fo ± 105)	CT2
4DFA-886A-10	886.0	± 1.0	3.0	1.0	2.0	22(Fo ± 45)	Cordless Phone
4DFA-931A-10	931.0	± 1.0	3.0	1.0	2.0	22(Fo ± 45)	Cordless Phone, Pager
4DFA-906A-10	906.5	± 1.0	6.0	0.5	2.0	10,25 (Fo - 21, +19)	Cordless Phone
4DFA-926A-10	926.5	± 1.0	6.0	0.5	2.0	25,10 (Fo - 19, +40)	Cordless Phone
4DFA-904A-10	904.0	± 1.0	3.8	0.5	2.0	21,30 (Fo +21.5, +44)	Cordless Phone
4DFA-926A-11	926.5	± 1.0	3.8	0.5	2.0	21,30 (Fo - 21.5, -44)	Cordless Phone
4DFA-915E-10	915.0	± 13.0	2.2	1.0	2.0	18(Fo ± 77.5)	RF Data, Cordless,ISM
4DFA-1227B-10	1227.0	± 5.0	2.0	0.8	2.0	7,30(Fo ± 35,140)	GPS
4DFA-1227B-11	1227.0	± 5.0	1.2: 0.7 typ	0.5	2.0	15,20(Fo + 140,-140)	GPS
4DFA-1575B-10	1575.4	± 5.0	2.0: 1.4 typ	0.8	2.0	7,30(Fo ± 35,140)	GPS
4DFA-1575B-12	1575.4	± 5.0	1.2: 0.7 typ	0.5	2.0	17,20(Fo+140,-140)	GPS
4DFA-1575B-14	1575.4	± 5.0	2.5: 1.8 typ	0.8	2.0	17(Fo ± 50)	GPS
4DFA-1890D-10	1890.0	± 10.0	2.0	1.0	2.0	20(Fo ± 89)	DECT
4DFA-1903C-10	1903.0	± 8.0	2.7	1.0	2.0	15,27(Fo ± 50,100)	PHP
4DFA-2442P-10	2442.0	± 40.0	2.5	1.0	2.0	15(Fo ± 250)	RF Data, ISM
4DFA-2450T-10	2450.0	± 50.0	2.0	1.0	2.0	22(Fo - 280)	RF Data, ISM
4DFA-2500A-10	2500.0	± 2.0	3.0	1.0	2.0	18,25(Fo ± 60,90)	RACS

TYPE 4DFB (3 Pole SMD Type)

Frequency Range: 800-2000MHz
Temperature Range: –25°C to +85°C







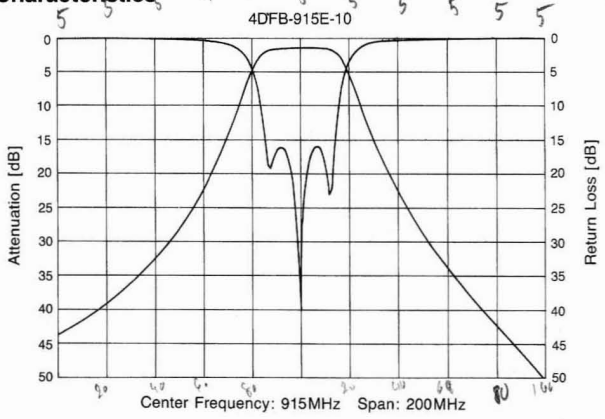
(Unit: mm)
Tolerance: ±0.5

* Depends on center frequency

Measurement values: 4DFB-915E-10

Passband Insertion Loss	1.84dB Max.
Passband Ripple	0.45dB
Passband V.S.W.R.	1.39 Max.
Attenuation	
at 882.5MHz	16.9dB
at 947.5MHz	16.8dB

Characteristics



STANDARD DEVICES SELECTION GUIDE

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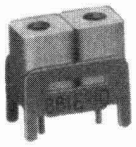
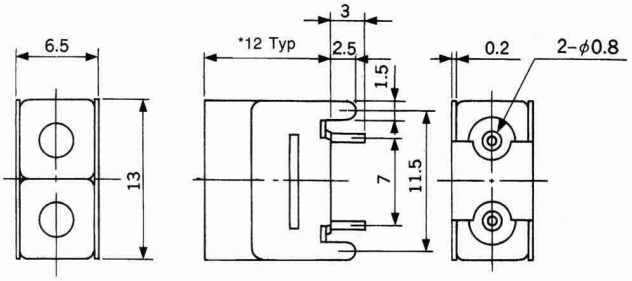
TYPE 4DFB: SMD 3 Pole Designs

Part Number	Center Freq. (MHz)	Bandwidth (Fo ± MHz)	I.L. (dB max.)	Ripple (dB max.)	VSWR in BW	Selectivity dB min. @ MHz	Application
4DFB-815D-10	815.5	±10.0	2.5	0.8	2.0	15,35(Fo ± 35,80)	SMR, Ardis
4DFB-860D-10	860.5	±10.0	2.5	0.8	2.0	15,35(Fo ± 35,80)	SMR, Ardis
4DFB-836E-10	836.5	± 12.5	2.5	1.0	2.0	12(Fo ± 32.5)	Cellular-AMPS/TDMA/CDMA
4DFB-881E-10	881.5	± 12.5	2.5	1.0	2.0	12(Fo ± 32.5)	Cellular-AMPS/TDMA/CDMA
4DFB-886A-10	886.0	± 1.0	4.5	0.5	2.0	41(Fo ± 45)	Cordless Phone
4DFB-931A-10	931.0	± 1.0	4.5	0.5	2.0	41(Fo ± 45)	Cordless Phone, Pager
4DFB-899A-10	899.0	± 3.0	4.5	1.0	2.0	54,62(Fo-100,+100)	Mobitex
4DFB-938A-10	938.0	± 3.0	4.5	1.0	2.0	16,48(Fo-16,-74)	Mobitex
4DFB-914A-10	914.5	± 0.5	4.5	0.5	2.0	40(Fo ± 45)	Cordless Phone
4DFB-959A-10	959.5	± 0.5	4.5	0.5	2.0	40(Fo ± 45)	Cordless Phone
4DFB-915E-10	915.0	± 13.0	2.7	1.0	2.0	12(Fo ± 32.5)	RF Data, Cordless, SST
4DFB-1030C-10	1030.0	± 7.5	3.2	1.0	1.6	20,50(Fo ± 35,140)	TCAS
4DFB-1227D-10	1227.0	± 10.0	3.2	1.0	2.0	12,40(Fo ± 35,140)	GPS
4DFB-1575D-10	1575.0	± 10.0	3.2	1.0	2.0	12,40(Fo ± 35,140)	GPS
4DFB-1542G-10	1542.0	± 17.0	2.0	1.0	2.0	17(Fo ± 84.5)	MCSS/INMARSAT
4DFB-1643G-10	1643.5	± 17.0	1.6	0.5	1.5	18,28(Fo -67, +108)	MCSS/INMARSAT
4DFB-1747N-10	1747.5	± 35.0	2.0	1.2	2.0	12,40(Fo ± 100,350)	PCN
4DFB-1842N-10	1842.5	± 35.0	2.0	1.2	2.0	24,38(Fo ± 157,350)	PCN
4DFB-1880L-10	1880.0	± 30.0	2.5	1.0	2.0	24(Fo±110)	USA-PCS
4DFB-1960L-10	1960.0	± 30.0	2.5	1.0	2.0	24(Fo±110)	USA-PCS
4DFB-1890D-10	1890.0	±10.0	2.5	1.0	2.0	25,40(Fo±89,210)	DECT
4DFB-2442P-10	2442.0	± 40.0	2.5	1.2	2.0	5,32(Fo ± 80,250)	RF Data, ISM
4DFB-2450T-10	2450.0	± 50.0	2.2	1.2	2.0	28(Fo-280)	RF Data, ISM

TYPE 6DFA (2 Pole Type)

Frequency Range: 800-1700MHz
Temperature Range: –25°C to +85°C





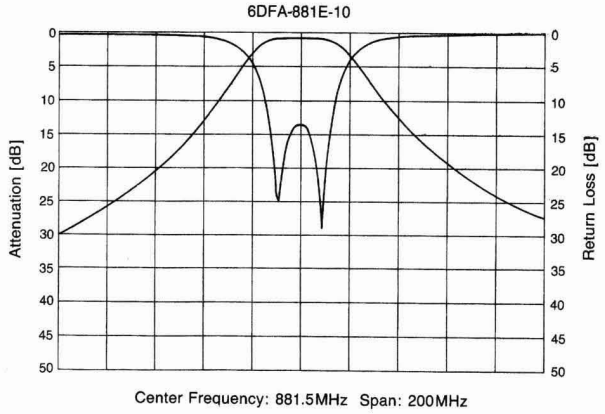
* Depends on center frequency

(Unit: mm)

Measurement values: 6DFA-881E-10

Passband Insertion Loss	1.15dB Max.
Passband Ripple	0.37dB
Passband V.S.W.R.	1.55 Max.
Attenuation	
at 804MHz	25.3dB
at 956MHz	23.5dB

Characteristics



STANDARD DEVICES SELECTION GUIDE

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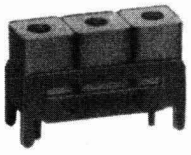
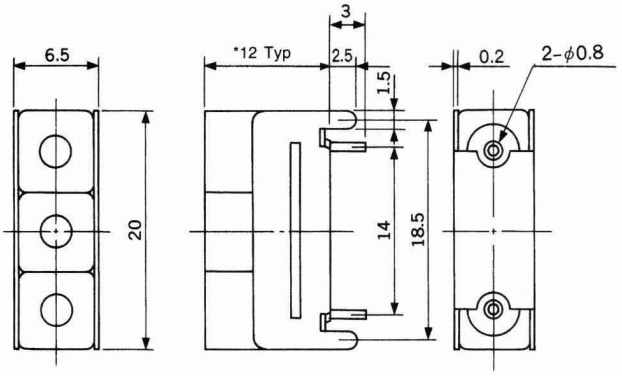
TYPE 6DFA: 2 Pole Designs

TOKO Part Number	Center Freq. (MHz)	Bandwidth (Fo±MHz)	Insertion Loss (dB max.)	Ripple in BW (dB max.)	V.S.W.R. in BW (max.)	Selectivity dB min. @ MHz	Application
6DFA-836E-10	836.5	±12.5	1.8	0.8	2.0	20 (Fo±77.5)	Cellular—AMPS
6DFA-881E-10	881.5	±12.5	1.8	0.8	2.0	20 (Fo±77.5)	Cellular—AMPS
6DFA-888G-10	888.5	±16.5	2.5	1.2	2.2	20 (Fo±77.5)	Cellular—TACS
6DFA-933G-10	933.5	±16.5	2.5	1.2	2.2	20 (Fo±77.5)	Cellular—TACS
6DFA-902E-10	902.5	±12.5	1.8	0.8	2.0	20 (Fo±77.5)	Cellular—NMT/GSM
6DFA-947E-10	947.5	±12.5	1.8	0.8	2.0	20 (Fo±77.5)	Cellular—NMT/GSM
6DFA-915E-10	915.0	±13.0	1.8	0.8	2.0	20 (Fo±77.5)	Spread Spectrum
6DFA-866A-10	866.0	± 2.0	3.0	1.0	2.0	30 (Fo±75)	CT2
6DFA-886A-10	886.0	± 1.0	2.2	0.5	1.8	24 (Fo±45)	Cordless Phone
6DFA-931A-10	931.0	± 1.0	2.2	0.5	1.8	24 (Fo±45)	Cordless Phone
6DFA-914A-10	914.5	± 0.5	2.2	0.5	1.8	24 (Fo±45)	Cordless Phone
6DFA-959A-10	959.5	± 0.5	2.2	0.5	1.8	24 (Fo±45)	Cordless Phone
6DFA-1227B-12	1277.0	± 5.0	1.8	0.8	2.0	12 (Fo±50)	GPS Receiver
6DFA-1575B-10	1575.4	± 5.0	1.8	0.8	2.0	12 (Fo±50)	GPS Receiver

TYPE 6DFB (3 Pole Type)

Frequency Range: 800-1700MHz
Temperature Range: –25°C to +85°C





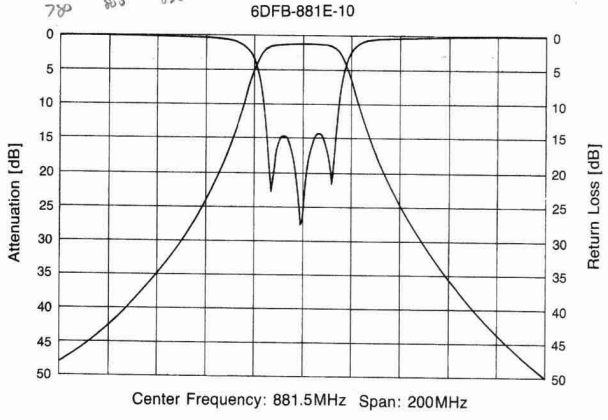
* Depends on center frequency

(Unit: mm)

Measurement values: 6DFB-881E-10

Passband Insertion Loss	1.51dB Max.
Passband Ripple	0.37dB
Passband V.S.W.R.	1.48 Max.
Attenuation	
at 849MHz	18.5dB
at 914MHz	18.7dB

Characteristics



STANDARD DEVICES SELECTION GUIDE

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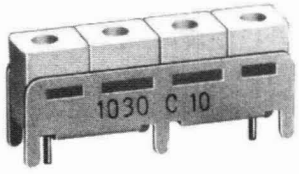
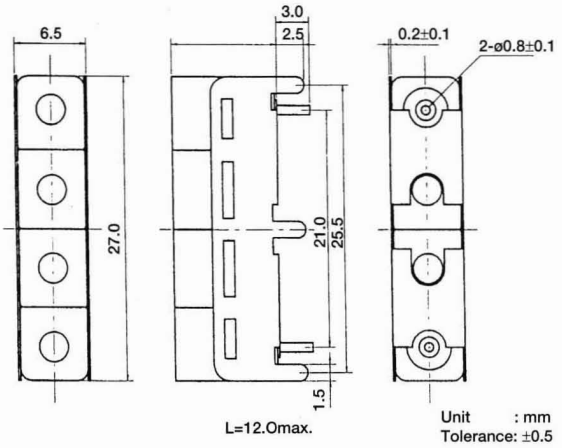
TYPE 6DFB: 3 Pole Designs

TOKO Part Number	Center Freq. (MHz)	Bandwidth (Fo±MHz)	Insertion Loss (dB max.)	Ripple in BW (dB max.)	V.S.W.R. in BW (max.)	Selectivity dB min. @ MHz	Application
6DFB-836E-10	836.5	±12.5	2.0	0.8	2.0	12 (Fo±32.5)	Cellular—AMPS
6DFB-881E-10	881.5	±12.5	2.0	0.8	2.0	12 (Fo±32.5)	Cellular—AMPS
6DFB-888G-10	888.5	±16.5	2.5	0.8	2.0	6 (Fo±28.5)	Cellular—TACS
6DFB-933G-10	933.5	±16.5	2.5	0.8	2.0	6 (Fo±28.5)	Cellular—TACS
6DFB-902E-10	902.5	±12.5	2.0	0.8	2.0	12 (Fo±32.5)	Cellular—NMT/GSM
6DFB-947E-10	947.5	±12.5	2.0	0.8	2.0	12 (Fo±32.5)	Cellular—NMT/GSM
6DFB-915E-10	915.0	±13.0	2.0	0.8	2.0	12 (Fo±32.5)	Spread Spectrum
6DFB-866A-10	866.0	± 2.0	4.5	1.0	2.0	20 (Fo±16)	CT2
6DFB-886A-10	886.0	± 1.0	4.0	0.5	2.0	45, 50 (Fo-45, +45)	Cordless Phone
6DFB-931A-10	931.0	± 1.0	4.0	0.5	2.0	45,50 (Fo-45, +45)	Cordless Phone
6DFB-914A-10	914.5	± 0.5	4.0	0.5	2.0	45, 50 (Fo-45, +45)	Cordless Phone
6DFB-959A-10	959.5	± 0.5	4.0	0.5	2.0	45, 50 (Fo-45, +45)	Cordless Phone
6DFB-1575B-10	1575.4	± 5.0	3.0	1.0	2.0	18 (Fo±50)	GPS Receiver
6DFB-1544F-10	1544.5	±14.5	3.0	1.0	2.0	20, 30 (Fo-64, +82.5)	INMARSAT
6DFB-1643G-11	1643.5	±17.0	3.0	1.0	2.0	23, 37 (Fo-67, +108)	INMARSAT

TYPE 6DFC (4 Pole Type)

Frequency Range: 800-1500MHz
Temperature Range: –25°C to +85°C

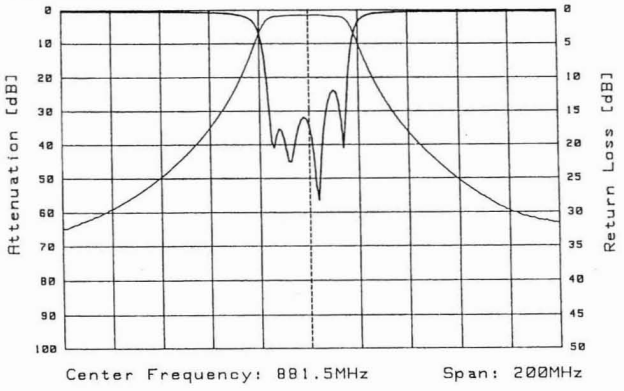




Measurement values: **6DFC-881E-10**

Passband Insertion Loss	2.15dB Max.
Passband Ripple	0.54dB
Passband V.S.W.R.	1.60 Max.
Attenuation	
at 849MHz	28.2dB
at 914MHz	28.0dB

Characteristics



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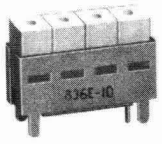
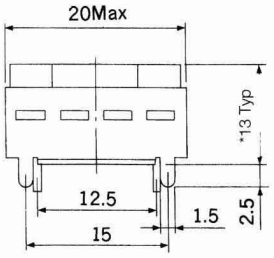
TYPE 6DFC: 4 Pole Designs

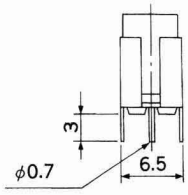
TOKO Part Number	Center Freq. (MHz)	Bandwidth (Fo±MHz)	Insertion Loss (dB max.)	Ripple in BW (dB max.)	V.S.W.R. in BW (max.)	Selectivity dB min. @ MHz	Application
6DFC-836E-10	836.5	± 12.5	2.7	1.0	2.0	23 (Fo±32.5)	Cellular—E-AMPS
6DFC-881E-10	881.5	± 12.5	2.7	1.0	2.0	23 (Fo±32.5)	Cellular—E-AMPS
6DFC-902E-10	902.5	± 12.5	2.7	1.0	2.0	23 (Fo±32.5)	Cellular—NMT/GSM
6DFC-947E-10	947.5	± 12.5	2.7	1.0	2.0	20 (Fo±32.5)	Cellular—NMT/GSM
6DFC-1030C-10	1030.0	± 7.5	3.0	1.0	2.0	40, 60 (Fo±40, 120)	TCAS
6DFC-1090C-10	1090.0	± 7.5	3.0	1.0	2.0	40, 60 (Fo±40, 120)	TCAS
6DFC-1553I-10	1553.2	± 23.25	3.0	1.0	2.0	25 (Fo±73.25)	Satellite Reciever
6DFC-1747O-10	1747.5	± 37.5	3.0	1.0	2.2	10, 20 (Fo±57.5, 80)	PCN/DCS
6DFC-1842O-12	1842.5	± 37.5	2.5	1.1	2.4	8, 21 (Fo±57.5, 80)	PCN/DCS

TYPE 6DFSC (4 Pole Type)

Frequency Range: 800-1500MHz
Temperature Range: –25°C to +85°C



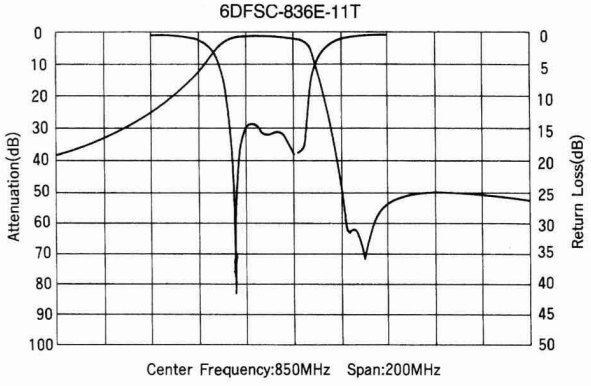




(Unit: mm)

* Depends on center frequency

Characteristics



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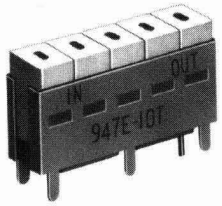
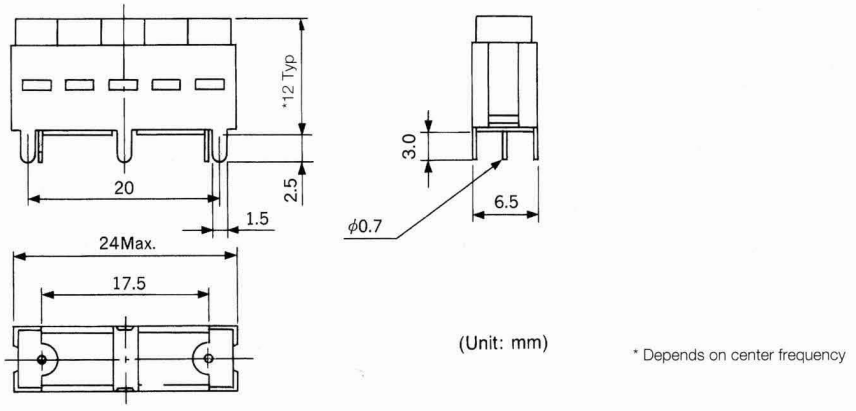
TYPE 6DFSC: 4 Pole Designs

TOKO Part Number	Center Freq. (MHz)	Bandwidth (Fo±MHz)	Insertion Loss (dB max.)	Ripple in BW (dB max.)	V.S.W.R. in BW (max.)	Selectivity dB min. @ MHz
6DFSC-836E-12T	836.5	±12.5	2.5	0.9	1.7	40 (869-894)

TYPE 6DFSD (5 Pole Type)

Frequency Range: 800-1500MHz
Temperature Range: –25°C to +85°C

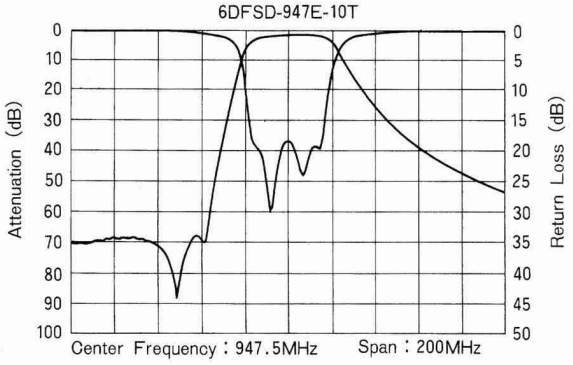




(Unit: mm)

* Depends on center frequency

Characteristics



STANDARD DEVICES SELECTION GUIDE

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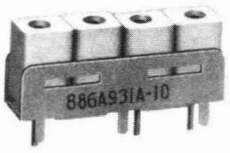
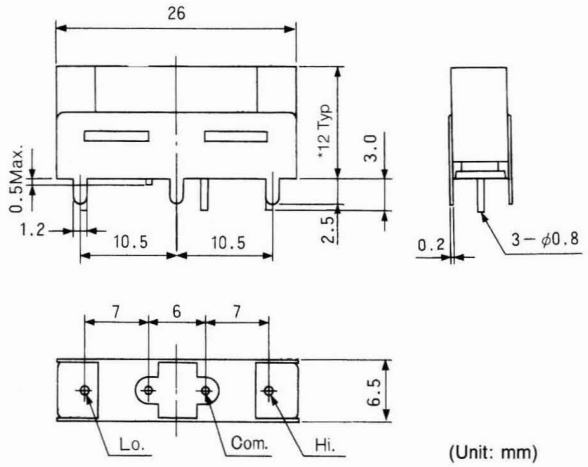
TYPE 6DFSD: 5 Pole Designs

TOKO Part Number	Center Freq. (MHz)	Bandwidth (Fo±MHz)	Insertion Loss (dB max.)	Ripple in BW (dB max.)	V.S.W.R. in BW (max.)	Selectivity dB min. @ MHz	Application
6DFSD-881E-10	881.5	±12.5	3.5	1.2	2.0	24 (Fo±32.5)	Cellular—E-AMPS
6DFSD-881E-12T	881.5	±12.5	3.5	1.2	1.7	52 (824-849)	Cellular—E-AMPS
6DFSD-902E-10	902.5	±12.5	3.5	1.2	1.7	25 (Fo±32.5)	Cellular—NMT/GSM
6DFSD-947E-11	947.5	±12.5	3.5	1.2	1.7	25 (Fo±32.5)	Cellular—NMT/GSM
6DFSD-947E-10T	947.5	±12.5	3.5	1.5	1.7	53 (890-915)	Cellular—NMT/GSM
6DFSD-1030C-10	1030.0	± 7.5	3.0	0.7	2.0	60 (Fo±60)	TCAS
6DFSD-1090C-10	1090.0	± 7.5	3.5	1.0	2.0	60 (Fo±60)	TCAS

TYPE 6DPD Antenna Duplexers

Frequency Range: 800-1500MHz
Temperature Range: –25°C to +85°C





(Unit: mm)

* Depends on center frequency

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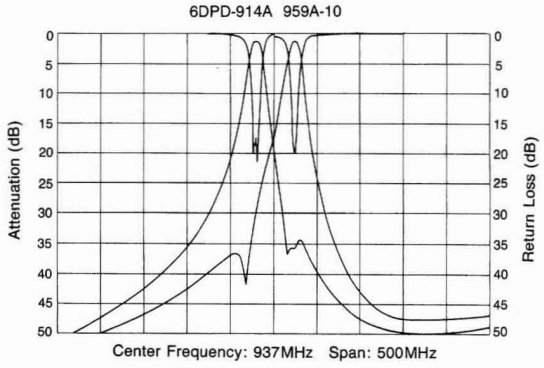
Specifications: 6DPD

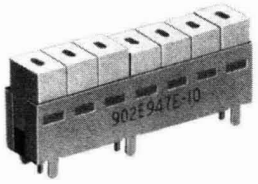
	Tx (Transmit Side)	Rx (Receive Side)
Center Frequency	914.5MHz	959.5MHz
Passband Width	1MHz	1MHz
Passband Insertion Loss	2.2dB max.	2.2dB max.
Passband Ripple	0.5dB max.	0.5dB max.
Passband V.S.W.R.	2.0 MAX.	2.0 MAX.
Attenuation Fo-45MHz Fo+45MHz	25dB Min.	25dB min.
Maximum Input Power	1W	
Input/Output Impedance	50Ω	50Ω

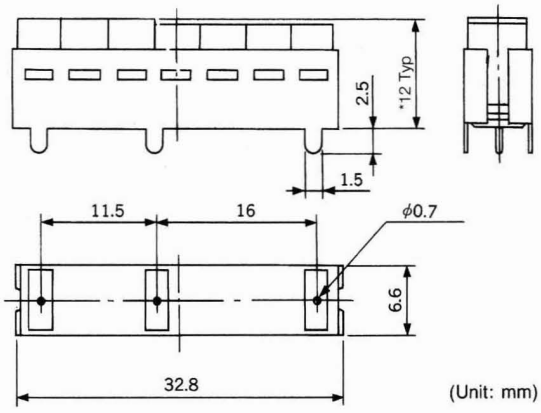
Characteristics



TYPE 6DPH Antenna Duplexers

Frequency Range: 800-1500MHz
Temperature Range: –25°C to +85°C





(Unit: mm)

* Depends on center frequency

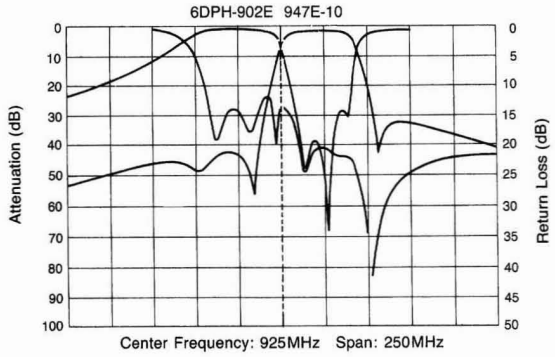
STANDARD DEVICES SELECTION GUIDE

The Part Numbers shown in the table below are standard devices which are readily available. TOKO will design and manufacture modified and custom devices with specific characteristics to meet your requirements. If you do not find the device for your application in this catalog, please contact our sales office or representative office.

Specifications: 6DPH

	Tx (Transmit Side)	Rx (Receive Side)
Center Frequency	902.5MHz	947.5MHz
Passband Width	±12.5MHz	±12.5MHz
Passband Insertion Loss	2.2dB max.	2.5dB max.
Passband Ripple	1.0dB max.	1.0dB max.
Passband V.S.W.R.	2.0 max.	2.0 max.
Attenuation 0.35-960MHz 0-915MHz	30dB min.	 25dB Min.
Maximum Input Power	4W (average)	
Input/Output Impedance	50Ω	50Ω

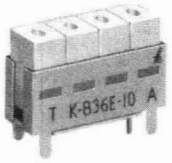
Characteristics



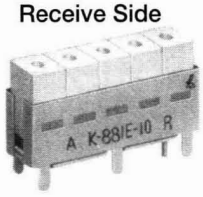
TYPE 6DPK Antenna Duplexers

Frequency Range: 800-1500MHz
Temperature Range: –25°C to +85°C

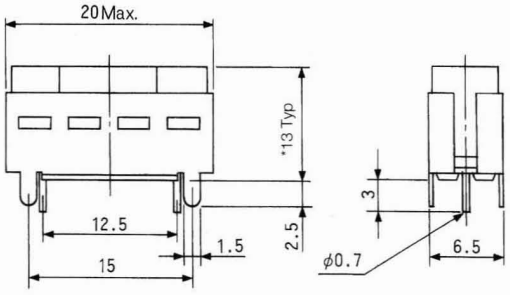
Transmit Side



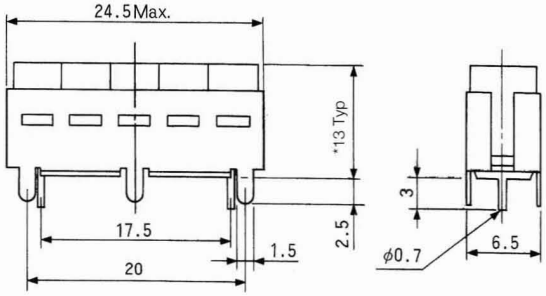
Receive Side



Transmit Side



Receive Side



(Unit: mm)

* Depends on center frequency

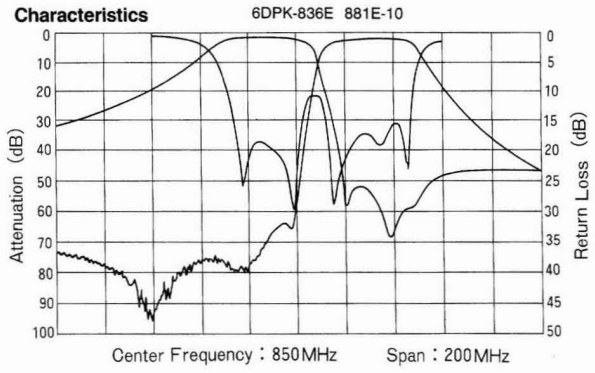
STANDARD DEVICES SELECTION GUIDE

The Part Numbers shown in the table below are standard devices which are readily available. TOKO will design and manufacture modified and custom devices with specific characteristics to meet your requirements. If you do not find the device for your application in this catalog, please contact our sales office or representative office.

Specifications: 6DPK

Application	AMPS	
Part Number	6DPK-836E881E-10	
	Tx (Transmit Side)	Rx (Receive Side)
Center Frequency	836.5MHz	881.5MHz
Passband Width	25MHz	25MHz
Passband Insertion Loss	2.5dB max.	3.6dB max.
Passband Ripple	0.9dB max.	1.2dB max.
Passband V.S.W.R.	1.7 max.	1.7 max.
Attenuation dB min.	869~894MHz 43	
		824~849MHz 55
Max. input power	2W	
Input/Output Impedance	50	50

Characteristics



Multilayer Chip Filters

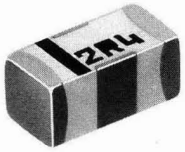
CONTENTS

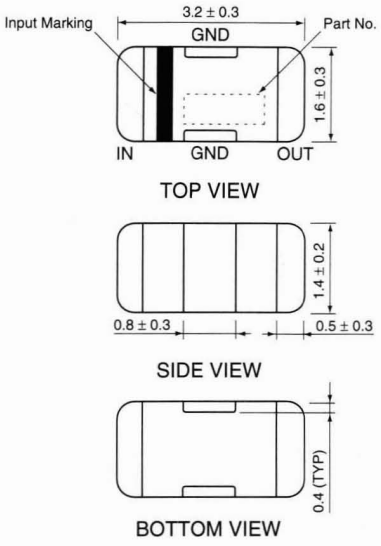
LTF3216L 28

Toko LTF Series is a multilayer low-pass chip filter. Toko's proprietary ceramic multilayer material design allows excellent performance and exceptional reliability. Its ultra compact solution is ideal for filtering unwanted harmonics of the PA and LO out of the system. Specific parts have been designed for common systems such as cellular, ISM-900, PDC-1.5, PCS-1900, DCS-1800, DECT, PHS, and ISM-2.4.

TYPE LTF

Frequency Range: 800-2500MHz





Unit: mm

Features

- Miniature footprint: 3.2 x 1.6mm (1206)
- Low profile (1.4mm)
- Carrier frequency range: 800MHz ~ 2.6GHz
- Suitable for flow and reflow soldering
- Packaged on tape and reel
- Operating temeprature range: -25°C to +80°C
- Storage temperature range: -40°C to +85°C

TYPE LTF3216L

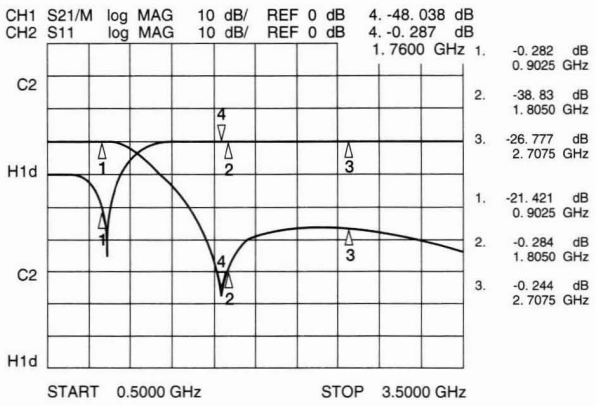
TOKO Part Number	Nominal Fo MHz	Bandwidth MHz	Insertion Loss	Bandwidth VSWR	Attenuation @2x(Fo±BW)	Attenuation @3x(Fo±BW)	Power Capacity	Impedance
LTF3216L-FR80G	836.5	25	0.6dBmax (0.35dB typ)	1.5 max (1.15 typ)	30dB min (37dB typ)	18dB min (27dB typ)	2 W (max)	50Ω
LTF3216L-FR90G	902.5	25						
LTF3216L-FR90C	968.0	25						
LTF3216L-FR90A	915	26						
LTF3216L-F1R3G	1311	24					3 W (max)	
LTF3216L-F1R4G	1441	24						
LTF3216L-F1R4A	1489	24						
LTF3216L-F1R6G	1660	25						
LTF3216L-F1R7G	1747.5	75						
LTF3216L-F1R8G	1880	60						
LTF3216L-F1R9A	1890	20						
LTF3216L-F1R9G	1907.5	25						
LTF3216L-F2R4G	2450	100						

TYPE LTF3216L

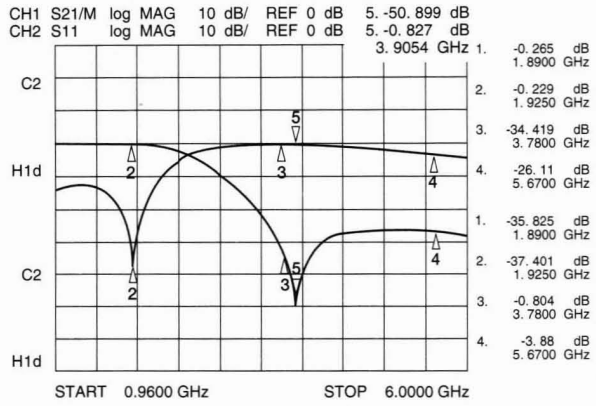
TOKO Part Number	Nominal Fo MHz	Bandwidth MHz	Insertion Loss	Bandwidth VSWR	Attenuation @2x(Fo±BW)	Attenuation @3x(Fo±BW)	Power Capacity	Impedance
LTF3216L-FR80GL	836.5	25	0.6dBmax (0.35dB typ)	1.5 max (1.15 typ)	25dB min (37dB typ)	18dB min (27dB typ)	2 W (max)	50Ω
LTF3216L-FR90GL	902.5	25						
LTF3216L-FR90CL	968.0	25						
LTF3216L-FR90AL	915	26						
LTF3216L-F1R3GL	1311	24					3 W (max)	
LTF3216L-F1R4GL	1441	24						
LTF3216L-F1R4AL	1489	24						
LTF3216L-F1R6GL	1660	25						
LTF3216L-F1R7GL	1747.5	75						
LTF3216L-F1R8GL	1880	60						
LTF3216L-F1R9AL	1890	20						
LTF3216L-F1R9GL	1907.5	25						
LTF3216L-F2R4GL	2450	100						

TYPICAL CHARACTERISTICS

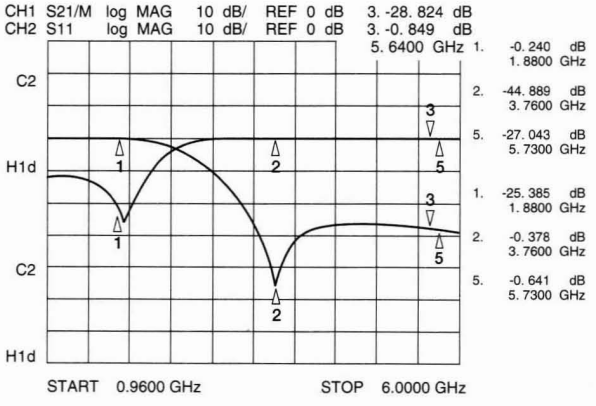
P/N LTF3216L-FR90G



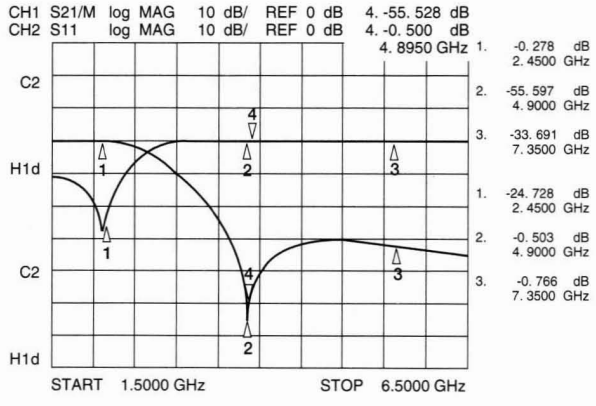
P/N LTF3216L-F1R9G



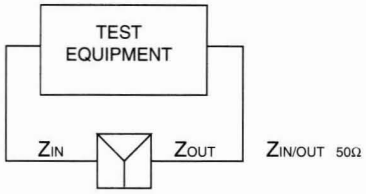
P/N LTF3216L-F1R8G



P/N LTF3216L-2R4G

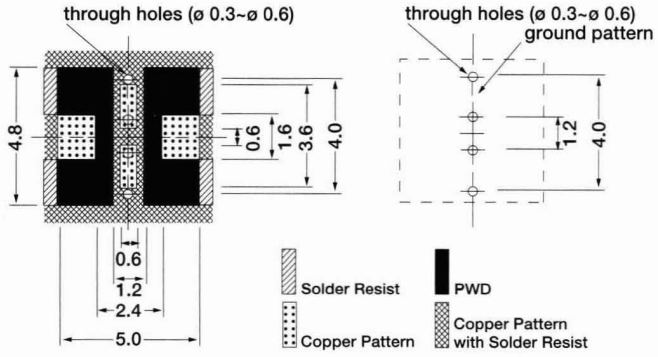


MEASUREMENT CIRCUIT



NETWORK ANALYZER: HP8753C
S PARAMETER TEST SET: HP85047A

RECOMMENDED SOLDER PAD LAYOUT



TOKO

Recommendations for Coil Usage

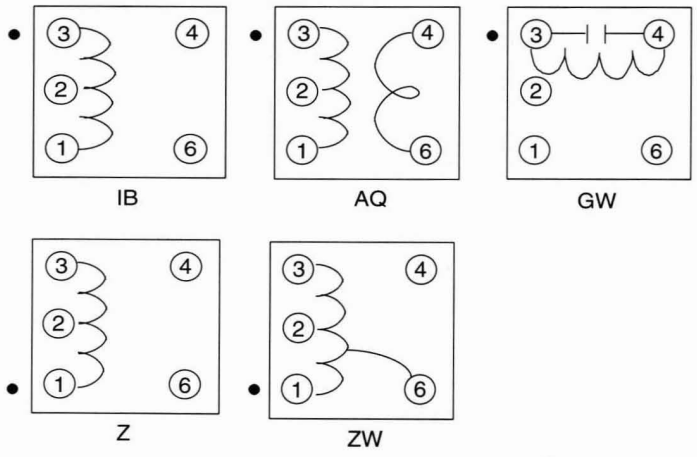
1. Store all parts in a clean, cool, dry place, away from corrosive gases.
2. Handle parts carefully and avoid dropping. Rough treatment may lead to breakages or changes in torque.
3. Oils from hands may weaken soldering. Do not touch terminals with bare hands.
4. Take care not to bend terminals.
5. Coils are prone to damage from flux rinse, etc. Avoid cleaning if possible and consult TOKO if cleaning is essential.
6. At the design stage and during production, take care that the magnetic tuning core is not obstructed by solder flux.
7. During set design, watch for spurious characteristics (especially with ceramic filters).
8. When fitting surface mounting specification coils and filters by hand, please also observe the following precautions:
   1) To ensure that leads are not broken:
      a. Remove parts from storage one at a time and avoid loose packaging.
      b. When mounting parts on the circuit board, take care not to place excessive stress on the pins.
      c. Use round-ended tweezers with no sharp edges, and avoid touching the coil wire.
      d. Once the part is mounted, do not use the soldering iron for manual corrections.
      e. Do not use ultrasonic cleaning (L leads may resonate and break).
   2) With LC filters, the filter characteristics are preset.
      Avoid adjustment after mounting.
9. Precautions when using helical filters:
   1) Avoid soldering to case surface.
   2) Avoid bending pins.
   3) To fix screw and case after adjustment, use cold curing conductive paint or equivalent.
   4) The screw is designed to be approximately flush with the top of the case after adjustment. The screw should not protrude excessively from the case.
   5) Avoid long-term storage as cases are silver-plated.
   6) Helical filters, other than 5CHLW, 5CHW and 5CHT, are designed for flow soldering and should not be reflow soldered.
   7) Do not use so much flux as to coat the entire surface of the circuit board.
   8) Circuit board through-hole diameter should be 0.3mm greater than pin diameter.
10. It is preferable that surface mount components be ordered and supplied on tape and reel.

Variable Coils for Surface Mounting

CONTENTS

FSDV 32
FSDVL 33
5CDL 34
5CDM 35
5CCD (5CCL) 36
5CCA 39
5CBL (5CBM) 40
5CCE 41

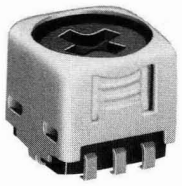
Standard Winding Configurations



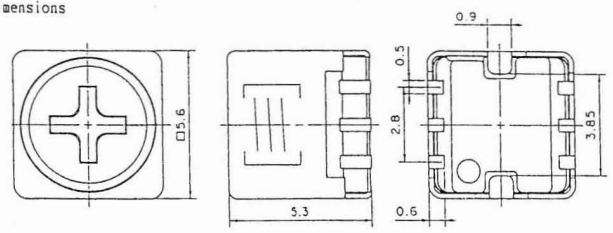
For other connection diagrams, see page 75.

TYPE FSDV

For Reflow Soldering
Frequency Range: 0.2-15MHz
Inductance Range: 1μH-7mH
Q:60 at 455kHz
Temperature Coefficient: TC (F) –40 –105ppm/°C



Dimensions



Unit: mm

Features

- Reliability guaranteed to 1000 hour min.
- Pin flatness guaranteed at 0.1mm max.
- Application: AM, FM car radio. communication equipment (Base Station) Car electronics, etc.

STANDARD COILS SELECTION GUIDE

TYPE FSDV

TOKO Part Number	Inductance (μH)	Q (min.)	Test Frequency (MHz)	Inductance Adjustable Range (%)
836AN-0122Z	160	45	0.796	±6
836AN-0123Z	180	45	0.796	±6
836AN-0124Z	200	45	0.796	±6
836AN-0125Z	220	45	0.796	±6
836AN-0126Z	240	45	0.796	±6
836AN-0127Z	270	45	0.796	±6
836AN-0128Z	300	45	0.796	±6
836AN-0129Z	330	45	0.796	±6
836AN-0130Z	360	45	0.796	±6
836AN-0131Z	390	45	0.796	±6
836AN-0132Z	430	45	0.796	±6
836AN-0133Z	470	45	0.796	±6
836AN-0134Z	510	45	0.796	±6
836AN-0135Z	560	45	0.796	±6
836AN-0136Z	620	40	0.796	±6
836AN-0137Z	680	40	0.796	±6
836AN-0138Z	750	40	0.796	±6
836AN-0139Z	820	40	0.796	±6
836AN-0140Z	910	40	0.796	±6
836AN-0141Z	1000	40	0.252	±6
836AN-0142Z	1100	20	0.252	±6
836AN-0143Z	1200	20	0.252	±6
836AN-0144Z	1300	20	0.252	±6
836EN-0145Z	1500	25	0.252	±6
836EN-0196Z	1600	25	0.252	±6

continued on next page

continued from previous page

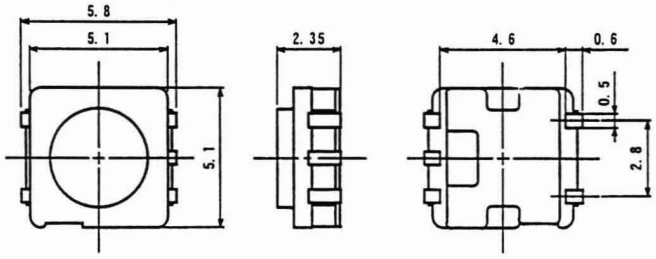
TYPE FSDV (cont'd)

TOKO Part Number	Inductance (μH)	Q (min.)	Test Frequency (MHz)	Inductance Adjustable Range (%)
836EN-0197Z	1800	30	0.252	±6
836EN-0198Z	2000	30	0.252	±6
836EN-0149Z	2200	30	0.252	±6
836EN-0199Z	2400	30	0.252	±6
836EN-0200Z	2700	30	0.252	±6
836EN-0201Z	3000	30	0.252	±6
836EN-0202Z	3300	30	0.252	±6
836EN-0154Z	3600	30	0.252	±6
836EN-0203Z	3900	30	0.252	±6
836EN-0204Z	4300	30	0.252	±6
836EN-0205Z	4700	30	0.252	±6
836EN-0206Z	5100	30	0.252	±6
836EN-0159Z	5600	30	0.252	±6
836EN-0207Z	6200	30	0.252	±6
836EN-0208Z	6800	30	0.252	±6

Surface Mount Matching Transformer

TYPE FSDVL

For Reflow Soldering
Frequency Range: 1-100MHz
Inductance Range: 1μH-500μH
Q:40 at 455kHz
Temperature Range: -40~+105°C

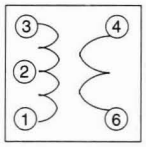


Unit: mm

Features

- Reliability guaranteed to 1000 hour min.
- Pin flatness guaranteed at 0.1mm max.
- Fixed tuning
- Application: Matching transformer in cellular phone.

Connections



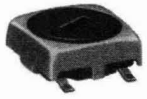
STANDARD COILS SELECTION GUIDE

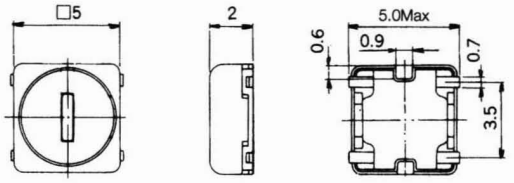
TYPE FSDVL

TOKO Part Number	Inductance (μH)	Center Frequency	Q (min.)	Test Frequency (MHz)
FSDVL-1011	1.5μH	85MHz	20	7.96

TYPE 5CDL

For Reflow Soldering
Frequency Range: 200kHz-15MHz
Inductance Range: 1-300µH
Temperature Coefficient: 50±200ppm/°C





Unit: mm

Features

- Wide inductance range, ideal for AM and FM IFT applications.
- Low profile version of 5CD for use in ultra-thin pocket radio.

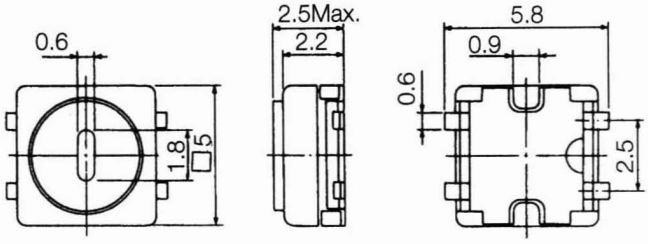
STANDARD COILS SELECTION GUIDE

TYPE 5CDL

TOKO Part Number	Tuning Capacitance or Inductance	Turns Ratio 1-3 : 4-6	Q (min.)	Test Frequency
L5CDLN-1105IB	430pF	126 / —	30	455KHz
L5CDLN-1151AQ	560pF	110 / 9	33	455KHz
L5CDLN-1055	1000pF	79 / 21	27	455KHz
L372PN-1094AN	47pF	18 / 2	30	10.7MHz
L372PN-1141Z	82pF	13 / —	35	10.7MHz
S372PN-1015	100pF	12 / 2	33	10.7MHz
L372PN-1238Z	56µH	52 / —	30	2.52MHz
L5CDLN-1211IB	109µH	78 / —	36	796KHz

TYPE 5CDM

For Reflow Soldering
Frequency Range: 100KHz~15MHz
Inductance Range: 1-300µH



Unit: mm

Features

- Wide inductance range, ideal for AM and FM IFT applications.
- Low profile version of 5CD for use in ultra-thin pocket radio.

STANDARD COILS SELECTION GUIDE

TYPE 5CDM

TOKO Part Number	Inductance	Turns Ratio 1-3 : 4-6	Q (min.)	Test Frequency	Tuning Capacitance
658AN-1173BHM	219uH	101/---	35	455KHz	560pF
658AN-A003WZ	219uH	101/8	35	455KHz	560pF
658AN-A001AQO	122uH	76/20	35	455KHz	1000pF
658CN-1044Z	3.9uH	16/---	55	10.7MHz	50pF
658CN-1034Z	4.7uH	16/---	55	7.96MHz	–
658AN-1094Z	300uH	119/---	60	796KHz	–
658AN-1111BHJ	180uH	94/---	50	796KHz	–
658CN-1144TT	67.5uH	65/65	40	2.52MHz	–
658CN-1014Z	2.7uH	12/---	50	7.96MHz	–

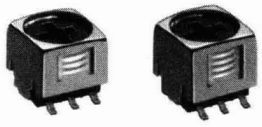
TYPE 5CCD (5CCL)

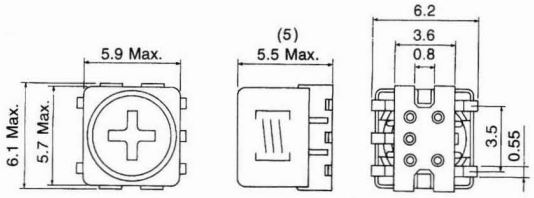
For Reflow Soldering

Frequency Range: 0.1-2MHz
0.1-15MHz (High Frequency)

Inductance Range: 1-1400µH (1-700µH)
1-330µH (1-150µH) (High Frequency)

Temperature Coefficient: TC (L) 80±120ppm/°C (70±120ppm/°C)
140±120ppm/°C (120±120ppm/°C) (High Frequency)
TC (F) –40±120ppm/°C (–30±120ppm/°C)
–80±120ppm/°C (–60±120ppm/°C) (High Frequency)





( ): 5CCL

Unit: mm

Features

- Low profile SMD for tight-spaced design.
- The 5CC series is intended for high stability applications.

STANDARD COILS SELECTION GUIDE

TYPE 5CCD

TOKO Part Number	Inductance (µH)	Q (min.)	Test Frequency (MHz)	Inductance Adjustable Range (%)	Notes
614BN-9018Z	1.8	45	7.96	±3	High Frequency
614BN-9020IB	2.0	45	7.96	±3	High Frequency
614BN-9022Z	2.2	45	7.96	±3	High Frequency
614BN-9024IB	2.4	50	7.96	±3	High Frequency
614BN-9027IB	2.7	50	7.96	±3	High Frequency
614BN-9030Z	3.0	50	7.96	±3	High Frequency
614BN-9033Z	3.3	55	7.96	±3	High Frequency
614BN-9036IB	3.6	55	7.96	±4	High Frequency
614BN-9039Z	3.9	55	7.96	±4	High Frequency
614BN-9043Z	4.3	55	7.96	±4	High Frequency
614BN-9047Z	4.7	55	7.96	±4	High Frequency
614BN-9051IB	5.1	55	7.96	±4	High Frequency
614BN-9056Z	5.6	65	7.96	±4	High Frequency
614BN-9062Z	6.2	65	7.96	±4	High Frequency
614BN-9068Z	6.8	65	7.96	±4	High Frequency

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TYPE 5CCD (cont'd)

TOKO Part Number	Inductance (μH)	Q (min.)	Test Frequency (MHz)	Inductance Adjustable Range (%)	Notes
614BN-9075Z	7.5	65	7.96	±4	High Frequency
614BN-9082Z	8.2	65	7.96	±4	High Frequency
614BN-9091Z	9.1	65	7.96	±4	High Frequency
614BN-9100Z	10	45	2.52	±5	High Frequency
614BN-9110Z	11	45	2.52	±5	High Frequency
614BN-9120Z	12	45	2.52	±5	High Frequency
614BN-9130Z	13	45	2.52	±5	High Frequency
614BN-9150Z	15	45	2.52	±5	High Frequency
614BN-9160Z	16	45	2.52	±5	High Frequency
614BN-9180Z	18	45	2.52	±5	High Frequency
614BN-9200Z	20	45	2.52	±5	High Frequency
614BN-9220Z	22	45	2.52	±5	High Frequency
614BN-9240Z	24	45	2.52	±5	High Frequency
614BN-9270Z	27	45	2.52	±5	High Frequency
614BN-9300Z	30	45	2.52	±5	High Frequency
614BN-9330Z	33	45	2.52	±5	High Frequency
614BN-9360Z	36	45	2.52	±5	High Frequency
614BN-9390Z	39	45	2.52	±5	High Frequency
614BN-9430Z	43	45	2.52	±5	High Frequency
614BN-9470Z	47	45	2.52	±5	High Frequency
614BN-9510Z	51	45	2.52	±5	High Frequency
614BN-9560Z	56	45	2.52	±5	High Frequency
614BN-9620Z	62	45	2.52	±5	High Frequency
614AN-9680Z	*68	*30	2.52	±5	
614AN-9750Z	*75	*30	2.52	±5	
614AN-9820Z	*82	*30	2.52	±5	
614AN-9910Z	*91	*30	2.52	±5	
614AN-9101Z	100	45	0.796	±5	
614AN-9111Z	110	45	0.796	±5	
614AN-9121Z	120	45	0.796	±5	
614AN-9131Z	130	45	0.796	±5	
614AN-9151Z	150	45	0.796	±5	
614AN-9161Z	160	45	0.796	±5	
614AN-9181Z	180	45	0.796	±5	
614AN-9201Z	200	45	0.796	±5	
614AN-9221Z	220	45	0.796	±5	
614AN-9241Z	240	45	0.796	±5	
614AN-9271Z	270	45	0.796	±5	
614AN-9301Z	300	45	0.796	±5	
614AN-9331Z	330	45	0.796	±5	
614AN-9361Z	360	45	0.796	±5	
614AN-9391Z	390	45	0.796	±5	
614AN-9431Z	430	45	0.796	±5	
614AN-9471Z	470	45	0.796	±5	
614AN-9511Z	510	45	0.796	±5	
614AN-9561Z	560	45	0.796	±5	
614AN-9621Z	620	45	0.796	±5	
614AN-9681Z	680	45	0.796	±5	
614AN-9751Z	750	45	0.796	±5	
614AN-9821Z	820	45	0.796	±5	
614AN-9911Z	910	45	0.796	±5	
614AN-9102Z	1000	30	0.252	±5	
614AN-9112Z	1100	30	0.252	±5	
614AN-9122Z	1200	30	0.252	±5	
614AN-9132Z	1300	30	0.252	±5	

*Q measured at 450kHz.

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TYPE 5CCL

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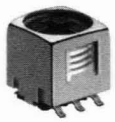
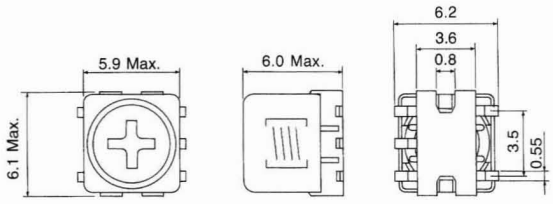
TOKO Part Number	Inductance (μH)	Q (min.)	Test Frequency (MHz)	Inductance Adjustable Range (%)	Notes
613BN-9020Z	2.0	45	7.96	±3	High Frequency
613BN-9022Z	2.2	45	7.96	±3	High Frequency
613BN-9024Z	2.4	45	7.96	±3	High Frequency
613BN-9027Z	2.7	45	7.96	±3	High Frequency
613BN-9030Z	3.0	45	7.96	±3	High Frequency
613BN-9033Z	3.3	45	7.96	±3	High Frequency
613BN-9036Z	3.6	45	7.96	±3	High Frequency
613BN-9039Z	3.9	45	7.96	±3	High Frequency
613BN-9043Z	4.3	45	7.96	±3	High Frequency
613BN-9047Z	4.7	45	7.96	±3	High Frequency
613BN-9051Z	5.1	45	7.96	±3	High Frequency
613BN-9056Z	5.6	45	7.96	±3	High Frequency
613BN-9062Z	6.2	45	7.96	±3	High Frequency
613BN-9068Z	6.8	45	7.96	±3	High Frequency
613BN-9075Z	7.5	45	7.96	±3	High Frequency
613BN-9082Z	8.2	45	7.96	±3	High Frequency
613BN-9091Z	9.1	45	7.96	±3	High Frequency
613BN-9100Z	10	40	2.52	±4	High Frequency
613BN-9110Z	11	40	2.52	±4	High Frequency
613BN-9120Z	12	40	2.52	±4	High Frequency
613BN-9130Z	13	40	2.52	±4	High Frequency
613BN-9150Z	15	40	2.52	±4	High Frequency
613BN-9160Z	16	40	2.52	±4	High Frequency
613BN-9180Z	18	40	2.52	±4	High Frequency
613BN-9200Z	20	40	2.52	±4	High Frequency
613BN-9220Z	22	40	2.52	±5	High Frequency
613BN-9240Z	24	40	2.52	±5	High Frequency
613BN-9270Z	27	40	2.52	±5	High Frequency
613BN-9300Z	30	40	2.52	±5	High Frequency
613BN-9330Z	33	40	2.52	±5	High Frequency
613BN-9360Z	36	40	2.52	±5	High Frequency
613BN-9390Z	39	40	2.52	±5	High Frequency
613BN-9430Z	43	40	2.52	±5	High Frequency
613BN-9470Z	47	40	2.52	±5	High Frequency
613BN-9510Z	51	40	2.52	±5	High Frequency
613BN-9560Z	56	40	2.52	±5	High Frequency
613BN-9620Z	62	35	2.52	±5	High Frequency
613AN-9680Z	68	30	2.52	±5	
613AN-9750Z	75	30	2.52	±5	
613AN-9820Z	82	30	2.52	±5	
613AN-9910Z	91	30	2.52	±5	
613AN-9101Z	100	45	0.796	±5	
613AN-9111Z	110	45	0.796	±5	
613AN-9121Z	120	45	0.796	±5	
613AN-9131Z	130	45	0.796	±5	
613AN-9151Z	150	45	0.796	±5	
613AN-9161Z	160	45	0.796	±5	
613AN-9181Z	180	45	0.796	±5	
613AN-9201Z	200	45	0.796	±5	
613AN-9221Z	220	45	0.796	±5	
613AN-9241Z	240	45	0.796	±5	
613AN-9271Z	270	45	0.796	±5	
613AN-9301Z	300	45	0.796	±5	
613AN-9331Z	330	45	0.796	±5	
613AN-9361Z	360	45	0.796	±5	
613AN-9391Z	390	45	0.796	±5	
613AN-9431Z	430	45	0.796	±5	
613AN-9471Z	470	45	0.796	±5	
613AN-9511Z	510	45	0.796	±5	
613AN-9561Z	560	45	0.796	±5	
613AN-9621Z	620	45	0.796	±5	
613AN-9981Z	680	45	0.796	±5	

TYPE 5CCA

For Reflow Soldering
Frequency Range: 0.1-15MHz
Inductance Range: 7mH max.
Temperature Coefficient: 350±150ppm/°C (–40 ~ 0°C),
200±150ppm/°C (0~ 85°C)





(Unit: mm)

Features

- Low profile SMD for tight-spaced design.
- The 5CC series is intended for high stability applications.

STANDARD COILS SELECTION GUIDE

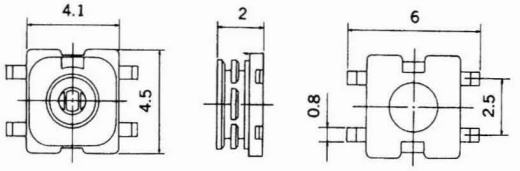
TYPE 5CCA

TOKO Part Number	Inductance (μH)	Q (min.)	Test Frequency (KHz)	Inductance Adjustable Range (%)	Note
615LN-9331Z	330	*40	796	±5	
615LN-9361Z	360	*40	796	±5	
615LN-9391Z	390	*40	796	±5	
615LN-9431Z	430	*40	796	±5	
615LN-9471Z	470	*40	796	±5	
615LN-9511Z	510	*40	796	±5	
615LN-9561Z	560	*40	796	±5	
615LN-9621Z	620	*40	796	±5	
615LN-9681Z	680	*40	796	±5	
615LN-9751Z	750	*40	796	±5	
615LN-9821Z	820	*40	796	±5	
615LN-9911Z	910	*40	796	±5	
615LN-9102Z	1000	35	252	±5	
615LN-9112Z	1100	35	252	±5	
615LN-9122Z	1200	35	252	±5	
615LN-9132Z	1300	35	252	±5	
615LN-9152Z	1500	35	252	±5	
615LN-9162Z	1600	35	252	±5	
615LN-9182Z	1800	35	252	±5	
615LN-9202Z	2000	35	252	±5	
615LN-9222Z	2200	35	252	±5	
615LN-9242Z	2400	35	252	±5	
615LN-9272Z	2700	35	252	±5	
615LN-9302Z	3000	35	252	±5	
615LN-9332Z	3300	35	252	±5	
615LN-9362Z	3600	35	252	±5	
615LN-9392Z	3900	30	252	±5	
615LN-9432Z	4300	30	252	±5	
615LN-9472Z	4700	30	252	±5	
615LN-9512Z	5100	30	252	±5	
615LN-9562Z	5600	30	252	±5	
615LN-9622Z	6200	30	252	±5	
615LN-9682Z	6800	30	252	±5	

*Q measured at 450kHz.

TYPE 5CBL/5CBM

For Reflow Soldering
Frequency Range: 30-200MHz
Inductance Range: 0.03-1.2µH
Temperature Coefficient: 150ppm/°C max.



Unit: mm

Features

- Ideal for hybrid micro circuits and high frequency applications.
- An ultra-thin profile (2mm) makes this coil ideal for space critical designs.

STANDARD COILS SELECTION GUIDE

Type 5CBL/5CBM

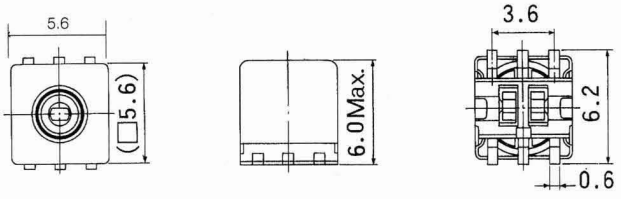
TOKO Part Number	Inductance (µH)	Turns Ratio 1-3 : 1-6	Q (min.)	Test Frequency (MHz)
370AN-1414Z	0.045	2 : —	40	100
370AN-1406Z	0.076	3 : —	40	100
370AN-1405ZW	0.12	4 : 1½	50	100
370AN-1413ZW	0.18	5 : 1½	55	100

TYPE 5CCE

For Reflow Soldering

Frequency Range: 10 ~ 150MHz
Inductance Range: 0.05 ~2.7µH
Q Approx.: 70 (at 100MHz)

5CCE



Unit: mm

Features

- Available with two internal capacitors (3 to 510pf) and up to five terminals for transformer windings or taps.
- Available ganged up to three coils for extended performance, for use as a BPF of LPF.

STANDARD COILS SELECTION GUIDE

TYPE 5CCE

Toko Part Number	Inductance and Measuring Frequency	Q and Measuring Frequency	DC Resistance (Ref. only)	SRF (Ref. only)
A638AN-0150Z	68nH±5% at 100MHz	60±20% at 100MHz	0.15 ohm max.	580MHz min.
A638AN-0151Z	82nH±5% at 100MHz	63±20% at 100MHz	0.29 ohm max.	580MHz min.
A638AN-0152Z	100nH±5% at 100MHz	65±20% at 100MHz	0.18 ohm max.	580MHz min.
A638AN-0153Z	120nH±5% at 100MHz	68±20% at 100MHz	0.20 ohm max.	580MHz min.
A638AN-0154Z	150nH±5% at 100MHz	63±20% at 100MHz	0.29 ohm max.	487MHz min.
A638AN-0155Z	180nH±5% at 100MHz	73±20% at 100MHz	0.22 ohm max.	443MHz min.
A638AN-0156Z	220nH±5% at 100MHz	60±20% at 100MHz	0.36 ohm max.	354MHz min.
A638AN-0157Z	270nH±5% at 100MHz	72±20% at 80MHz	0.26 ohm max.	270MHz min.
A638AN-0158Z	330nH±5% at 100MHz	75±20% at 80MHz	0.55 ohm max.	273MHz min.
A638AN-0159Z	390nH±5% at 100MHz	68±20% at 80MHz	0.46 ohm max.	230MHz min.
A638AN-0160Z	470nH±5% at 100MHz	67±20% at 60MHz	0.48 ohm max.	207MHz min.
A638AN-0161Z	560nH±5% at 100MHz	68±20% at 60MHz	0.52 ohm max.	180MHz min.
A638AN-0162Z	680nH±5% at 30MHz	50±20% at 30MHz	0.67 ohm max.	170MHz min.
A638AN-0163Z	820nH±5% at 30MHz	48±20% at 30MHz	0.73 ohm max.	155MHz min.
A638AN-0164Z	1000nH±5% at 30MHz	50±20% at 30MHz	1.04 ohm max.	136MHz min.
A638AN-0165Z	1200nH±5% at 30MHz	48±20% at 30MHz	1.12 ohm max.	113MHz min.
A638AN-0166Z	1500nH±5% at 30MHz	48±20% at 30MHz	1.26 ohm max.	110MHz min.
A638AN-0167Z	1800nH±5% at 30MHz	47±20% at 30MHz	1.36 ohm max.	105MHz min.
A638AN-0168Z	2200nH±5% at 30MHz	47±20% at 30MHz	2.00 ohm max.	100MHz min.

TOKO

Fixed Inductors for Surface Mounting

CONTENTS

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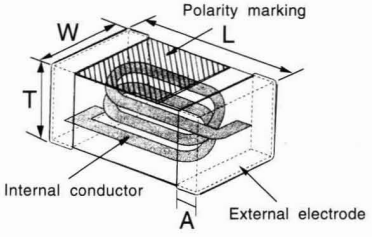
TYPE LL1005-FH

For Reflow Soldering
Inductance Range: 1.0-47.0nH
Temperature Coefficient: +250ppm/°C
Temperature Range: –40°C +100°C



Unit: mm

Type	L (mm)	W (mm)	T (mm)	A (mm)
LL1005F	1.0±0.15	0.5±0.15	0.5±0.15	0.25±0.1

Features

- Laminated ceramic allows high SRF
- Miniature size (1.0mm x 0.5mm)
- Packaged on tape and reel
- Q: 30 Typical (at 800MHz)
- S-parameter data available upon request

STANDARD PARTS SELECTION GUIDE

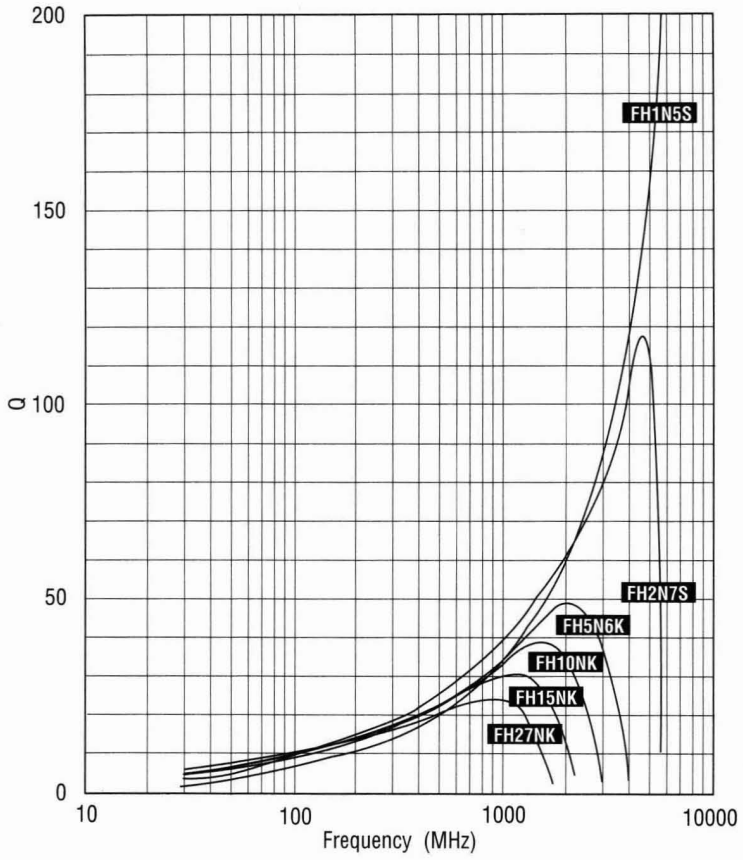
TYPE LL1005-FH

TOKO Part Number	L (nH) (1)	L Tol.*	Q 100MHz (typ) (1)	Q 800MHz (typ) (1)	SRF MHz (typ) (2)	RDCΩ (max) (3)	IDC mA (max)
LL1005-FH1N0S	1.0	S	9	28	>4000	0.10	300
LL1005-FH1N2S	1.2	S	9	28	>4000	0.10	300
LL1005-FH1N5S	1.5	S	10	28	>4000	0.10	300
LL1005-FH1N8S	1.8	S	10	27	>4000	0.10	300
LL1005-FH2N2S	2.2	S	10	29	>4000	0.12	300
LL1005-FH2N7S	2.7	S	10	30	>4000	0.12	300
LL1005-FH3N3_*	3.3	S, K	10	30	3800	0.15	300
LL1005-FH3N9_*	3.9	S, K	11	30	3400	0.15	300
LL1005-FH4N7_*	4.7	S, K	11	30	3000	0.18	300
LL1005-FH5N6_*	5.6	S, K	11	31	2700	0.20	300
LL1005-FH6N8_*	6.8	J, K	11	31	2400	0.25	300
LL1005-FH8N2_*	8.2	J, K	12	33	2200	0.25	300
LL1005-FH10N_*	10.0	J, K	12	32	1900	0.30	300
LL1005-FH12N_*	12.0	J, K	12	31	1750	0.30	300
LL1005-FH15N_*	15.0	J, K	12	30	1550	0.40	300
LL1005-FH18N_*	18.0	J, K	12	29	1350	0.50	300
LL1005-FH22N_*	22.0	J, K	12	28	1250	0.60	300
LL1005-FH27N_*	27.0	J, K	12	27	1100	0.60	300
LL1005-FH33N_*	33.0	J, K	10	25	1000	1.50	200
LL1005-FH39N_*	39.0	J, K	10	25	900	1.80	200
LL1005-FH47N_*	47.0	J, K	9	22	800	2.00	200

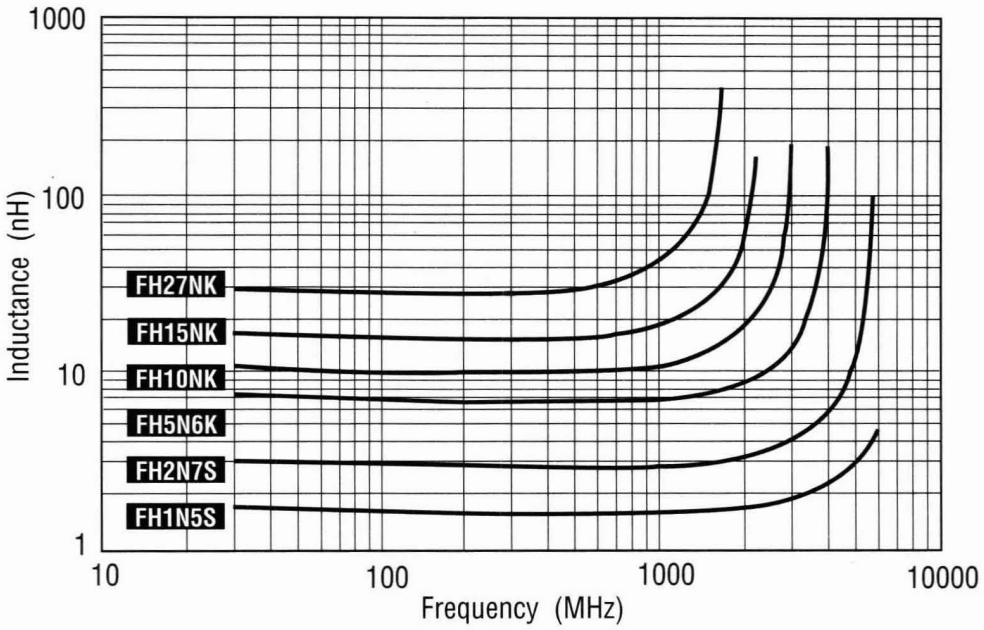
* Add tolerance to part number: S=±0.3nH, J=5%, K=10%
Testing Conditions: (1.) L,Q: HP4291A at 100MHz (Test fixture 16192A) (2.) SRF: HP8753C (Test fixture 16091A) (3.) RDC: VP-2811A Panasonic

ELECTRICAL CHARACTERISTICS

Q vs. Frequency

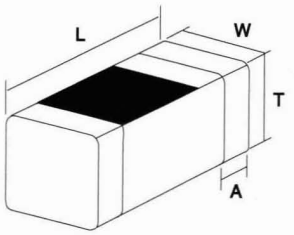


Inductance vs. Frequency



TYPE LL1608FH

For Reflow Soldering
Inductance Range: 1.2-100nH
Temperature Coefficient: +250ppm/°C
Temperature Range: –40°C +100°C



Unit: mm

Type	L (mm)	W (mm)	T (mm)	A (mm)
LL1608	1.6±0.15	0.8±0.15	0.8±0.15	0.3±0.2

Features

- Laminated ceramic allows high SRF
- Miniature size (1.6mm x 0.8mm)
- Packaged on tape and reel
- Q: 30 Typical (at 800MHz)
- S-parameter data available upon request

STANDARD PARTS SELECTION GUIDE

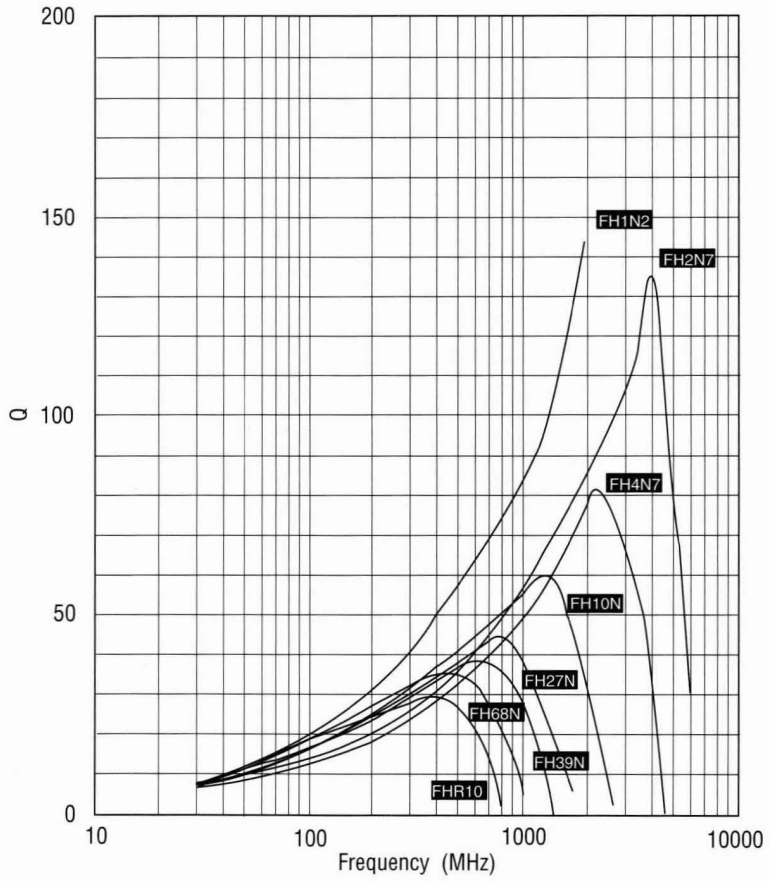
TYPE LL1608FH

TOKO Part Number	Lo (nH) (1)	L Tol.*	Q 100MHz (typ) (1)	Q 800MHz (typ) [500MHz] (1)	SRF MHz (typ) (2)	RDCΩ (max) (3)	IDC mA (max)
LL1608-FH1N2S	1.2	S	13	60	>6000	0.10	1000
LL1608-FH1N5S	1.5	S	13	47	>6000	0.10	1000
LL1608-FH1N8S	1.8	S	12	51	>6000	0.12	1000
LL1608-FH2N2S	2.2	S	12	38	>6000	0.16	1000
LL1608-FH2N7S	2.7	S	12	38	>6000	0.20	1000
LL1608-FH3N3_*	3.3	S,K	12	41	5900	0.22	1000
LL1608-FH3N9_*	3.9	S,K	13	50	5600	0.25	1000
LL1608-FH4N7_*	4.7	S,K	12	41	4800	0.28	1000
LL1608-FH5N6_*	5.6	S,K	12	42	4350	0.29	600
LL1608-FH6N8_*	6.8	J,K	12	40	3750	0.30	600
LL1608-FH8N2_*	8.2	J,K	13	34	3300	0.33	600
LL1608-FH10N_*	10.0	J,K	13	45	2850	0.35	600
LL1608-FH12N_*	12.0	J,K	15	46	2500	0.40	600
LL1608-FH15N_*	15.0	J,K	15	48	2150	0.45	600
LL1608-FH18N_*	18.0	J,K	16	48	2050	0.50	600
LL1608-FH22N_*	22.0	T,J,K	17	45	1850	0.55	600
LL1608-FH27N_*	27.0	T,J,K	17	43	1750	0.60	600
LL1608-FH33N_*	33.0	T,J,K	18	39	1500	0.65	600
LL1608-FH39N_*	39.0	T,J,K	17	[37]	1350	0.70	500
LL1608-FH47N_*	47.0	T,J,K	17	[35]	1200	0.90	500
LL1608-FH56N_*	56.0	T,J,K	17	[32]	1100	1.00	500
LL1608-FH68N_*	68.0	T,J,K	18	[34]	1000	1.50	400
LL1608-FH82N_*	82.0	T,J,K	18	[32]	900	2.00	400
LL1608-FHR10_*	100	T,J,K	18	[27]	830	2.50	400

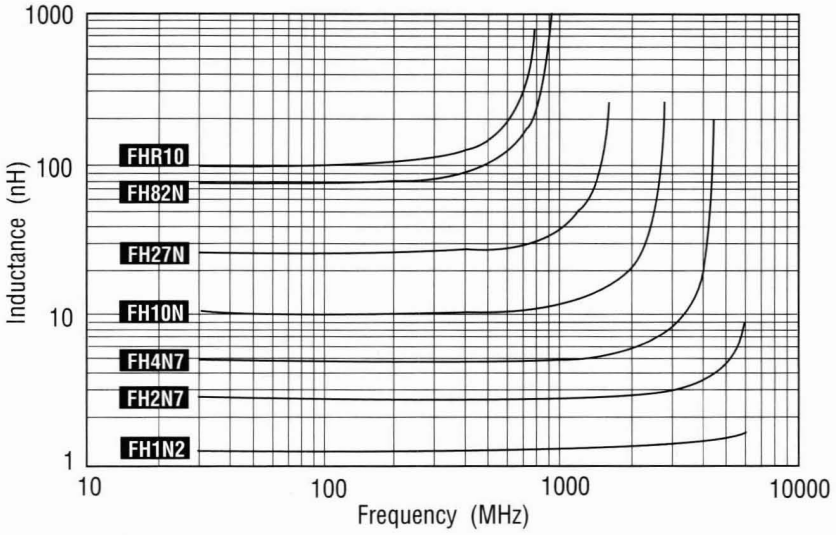
* Add tolerance to part number: S=±0.3nH, J=5%, K=10%
Testing Conditions: (1.) L,Q: HP4191A at 100MHz (Test fixture 16092A) (2.) SRF: HP8753C (Test fixture 16091A) (3.) RDC: VP-2811A Panasonic

ELECTRICAL CHARACTERISTICS

Q vs. Frequency

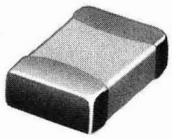


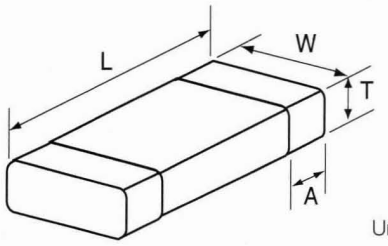
Inductance vs. Frequency



TYPE LL2012F

For Reflow Soldering
Inductance Range: 1.5-470nH
Temperature Coefficient: +250ppm/°C
Temperature Range: –40°C +100°C





Unit: mm

Type	L (mm)	W (mm)	T (mm)	A (mm)
LL2012	2.0±0.2	1.25±0.2	0.60±0.2 0.85±0.3 1.00±0.3	0.5±0.3

Features

- Laminated ceramic allows high SRF
- Miniature size (2mm x 1.2mm)
- Q: 50 Typical (at 800MHz)
- Packaged on tape and reel
- S-parameter data available upon request

STANDARD PARTS SELECTION GUIDE

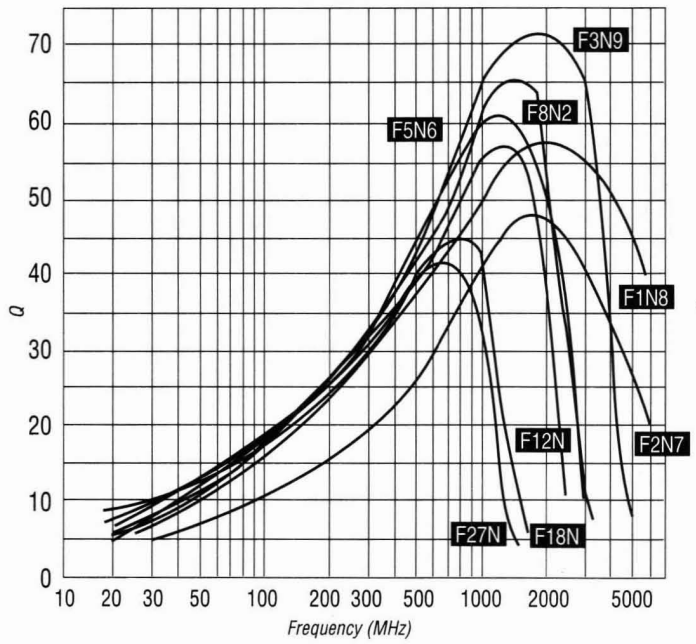
TYPE LL2012F

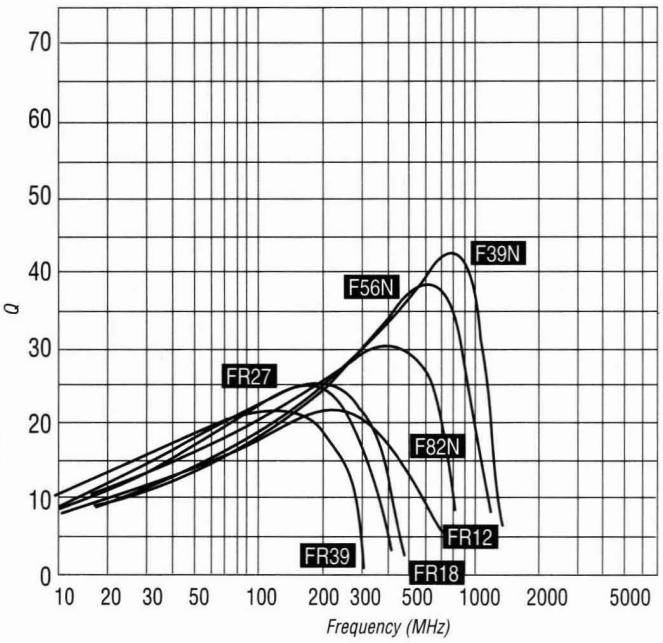
TOKO Part Number	Lo (nH)	L Tol.* (1)	Q 100MHz (typ) (1)	Q 800MHz (typ) (1)	SRF MHz (typ) (2)	RDCΩ (max) (3)	IDC mA (max)	Height T (mm)	Qty/reel
LL2012-F1N5S	1.5	S	13	40	>6000	0.10	300	0.60 ± 0.2	4000
LL2012-F1N8S	1.8	S	13	45	>6000	0.10	300	0.60 ± 0.2	4000
LL2012-F2N2S	2.2	S	13	48	>6000	0.10	300	0.60 ± 0.2	4000
LL2012-F2N7S	2.7	S	12	36	>6000	0.10	300	0.60 ± 0.2	4000
LL2012-F3N3_*	3.3	S,K,M	13	56	>6000	0.13	300	0.60 ± 0.2	4000
LL2012-F3N9_*	3.9	S,K,M	15	54	5400	0.15	300	0.60 ± 0.2	4000
LL2012-F4N7_*	4.7	S,K,M	15	50	4500	0.20	300	0.60 ± 0.2	4000
LL2012-F5N6_*	5.6	S,K,M	15	53	4000	0.23	300	0.60 ± 0.2	4000
LL2012-F6N8_*	6.8	J,K,M	15	51	3650	0.25	300	0.60 ± 0.2	4000
LL2012-F8N2_*	8.2	J,K,M	15	53	3000	0.28	300	0.60 ± 0.2	4000
LL2012-F10N_*	10.0	J,K,M	16	45	2500	0.30	300	0.85 ± 0.3	4000
LL2012-F12N_*	12.0	J,K,M	16	48	2450	0.35	300	0.85 ± 0.3	4000
LL2012-F15N_*	15.0	J,K,M	17	48	2000	0.40	300	0.85 ± 0.3	4000
LL2012-F18N_*	18.0	J,K,M	17	43	1750	0.45	300	0.85 ± 0.3	4000
LL2012-F22N_*	22.0	J,K,M	17	47	1700	0.50	300	0.85 ± 0.3	4000
LL2012-F27N_*	27.0	J,K,M	18	38	1550	0.55	300	0.85 ± 0.3	4000
LL2012-F33N_*	33.0	J,K,M	18	35	1350	0.60	300	0.85 ± 0.3	4000
LL2012-F39N_*	39.0	J,K,M	18	40	1300	0.65	300	0.85 ± 0.3	4000
LL2012-F47N_*	47.0	J,K,M	18	33	1200	0.70	300	1.00 ± 0.3	3000
LL2012-F56N_*	56.0	J,K,M	19	31	1150	0.75	300	1.00 ± 0.3	3000
LL2012-F68N_*	68.0	J,K,M	19	28	1000	0.85	300	1.00 ± 0.3	3000
LL2012-F82N_*	82.0	J,K,M	20	9	850	0.90	300	1.00 ± 0.3	3000
LL2012-FR10_*	100	J,K,M	18	–	730	1.00	300	1.00 ± 0.3	3000
LL2012-FR12_*	120	J,K,M	19	–	650	1.30	250	**1.10 ± 0.3	3000
LL2012-FR15_*	150	J,K,M	20	–	550	1.50	250	**1.10 ± 0.3	3000
LL2012-FR18_*	180	J,K,M	20	–	500	1.80	250	**1.10 ± 0.3	3000
LL2012-FR22_*	220	J,K,M	20	–	450	2.00	200	**1.10 ± 0.3	3000
LL2012-FR27_*	270	J,K,M	20	–	400	2.50	200	**1.10 ± 0.3	3000
LL2012-FR33_*	330	J,K,M	20	–	380	3.00	150	**1.10 ± 0.3	3000
LL2012-FR39_*	390	J,K,M	20	–	330	3.50	150	**1.10 ± 0.3	3000
LL2012-FR47_*	470	J,K,M	19	–	300	4.00	100	**1.10 ± 0.3	3000

* Add tolerance to part number: S=±0.3nH, J=5%, K=10%, M=20%,
Testing Conditions: (1.) L,Q: HP4191A at 100MHz (2.) SRF: HP8753C (Test fixture 16091A) (3.) RDC: VP-2811A Panasonic
** These parts have polarity/orientation marking

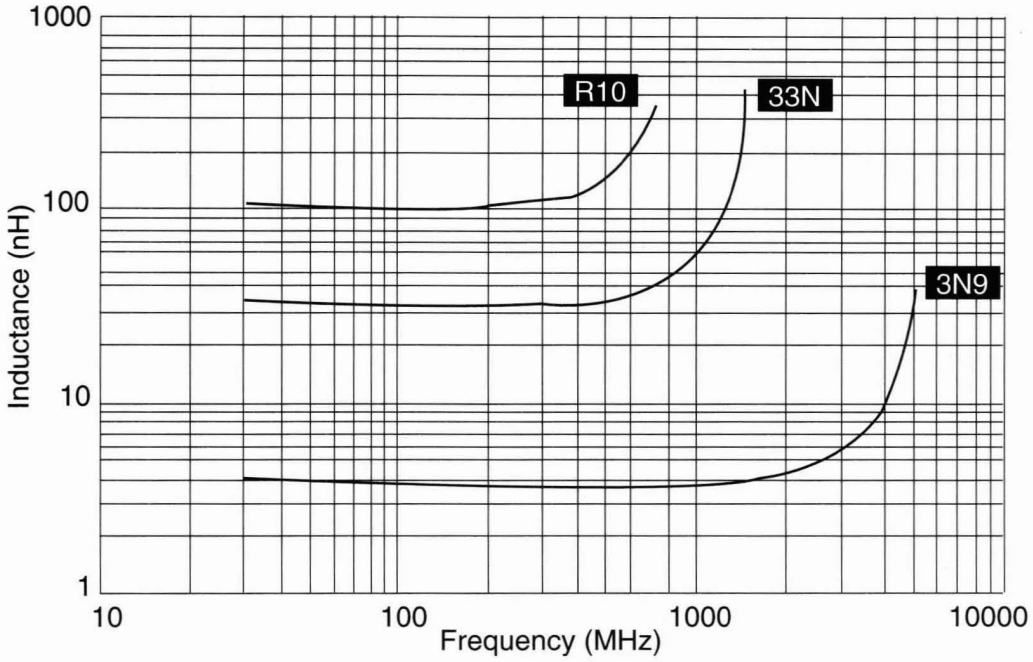
ELECTRICAL CHARACTERISTICS

Q vs. Frequency



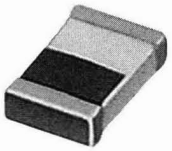


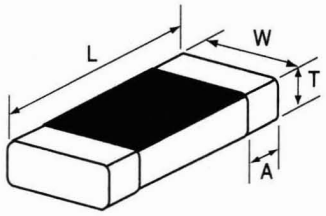
Inductance vs. Frequency



TYPE PTL2012F

For Reflow Soldering
Inductance Range: 1.0~39nH
Temperature Coefficient: ±100ppm/°C
Temperature Range: –40°C +100°C





Unit: mm

Type	L (mm)	W (mm)	T (mm)	A (mm)
PTL2012	2.0±0.2	1.25±0.2	0.5±0.15	0.3±0.2

Features

- 3% Inductance tolerance
- Miniature size: 0805 footprint
- Packaged on tape and reel in 4,000 piece quantity
- Self-resonent frequency ±10%

Part Numbering

PTL 2012 - F 10N T

- T — Tolerance (C=±0.2nH, S=±0.3nH, T=3%)
- 10N — Inductance
- F — Material (ceramic)
- 2012 — Dimensions (LxW)
- PTL — Type Name

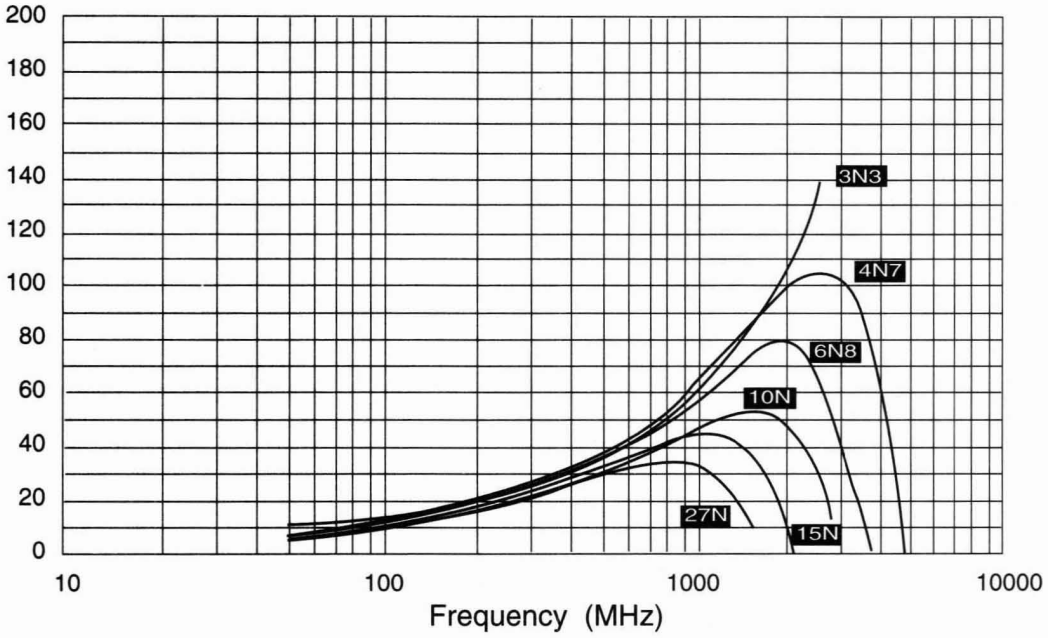
STANDARD PARTS SELECTION GUIDE

TYPE PTL2012F

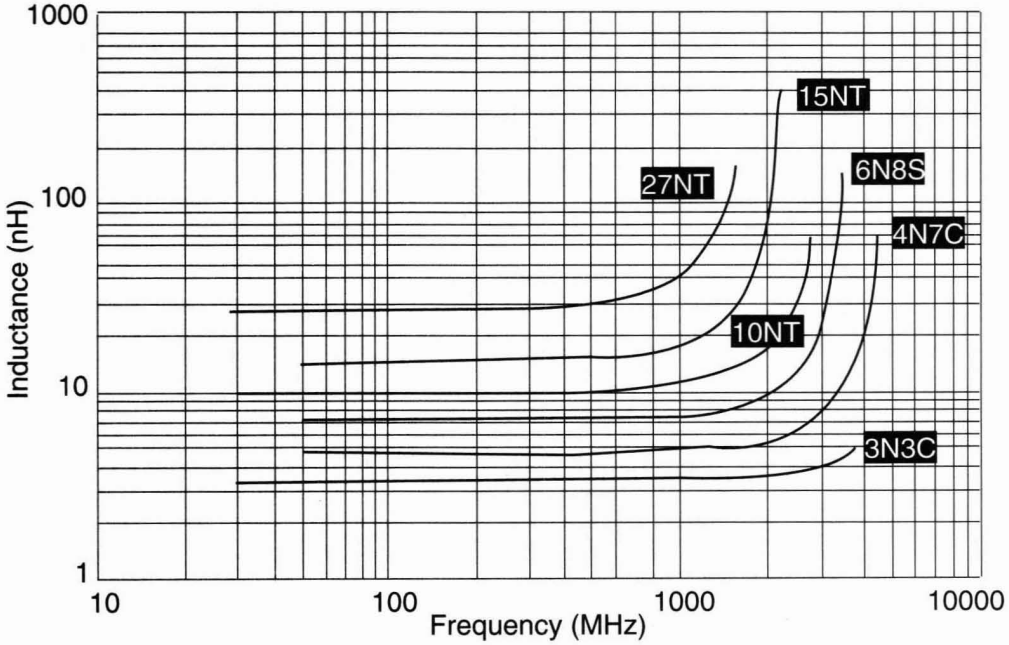
TOKO Part Number	Inductance (nH) at 100MHz (1)	Inductance Tolerance	Q 100MHz (typ) (1)	Q 800MHz (typ) (1)	Q 1800MHz (typ) (1)	SRF MHz (typ) (2)	RDC Ω (max) (3)	IDC mA (max)
PTL2012-F1N0C	1.0	C	15	55	70	10,000	0.10	300
PTL2012-F1N2C	1.2	C	12	42	56	9,000	0.10	300
PTL2012-F1N5C	1.5	C	9	34	47	8,000	0.15	300
PTL2012-F1N8C	1.8	C	9	30	42	7,200	0.20	300
PTL2012-F2N2C	2.2	C	11	50	67	6,500	0.20	300
PTL2012-F2N7C	2.7	C	10	40	55	6,000	0.30	300
PTL2012-F3N3C	3.3	C	10	40	55	5,300	0.35	300
PTL2012-F3N9C	3.9	C	10	38	53	4,800	0.45	300
PTL2012-F4N7C	4.7	C	10	37	50	4,400	0.50	300
PTL2012-F5N6C	5.6	C	10	40	53	3,950	0.55	300
PTL2012-F6N8S	6.8	S	9	38	52	3,600	0.75	300
PTL2012-F8N2S	8.2	S	9	37	50	3,150	0.90	300
PTL2012-F10NT	10	T	9	38	46	2,900	1.10	300
PTL2012-F12NT	12	T	9	38	44	2,550	1.30	300
PTL2012-F15NT	15	T	9	37	40	2,350	1.80	300
PTL2012-F18NT	18	T	9	36	35	2,050	2.10	300
PTL2012-F22NT	22	T	9	36	--	1,800	2.50	250
PTL2012-F27NT	27	T	9	35	--	1,650	2.70	250
PTL2012-F33NT	33	T	11	36	--	1,450	2.70	250
PTL2012-F39NT	39	T	11	33	--	1,300	3.00	250

Testing Conditions: 1.) L,Q: HP4291A at 100MHz (Test fixture 16192A) 2.) SRF: HP8753C (Test fixture 16091A) 3.)RDC: VP-2811A Panasonic

Q vs. Frequency

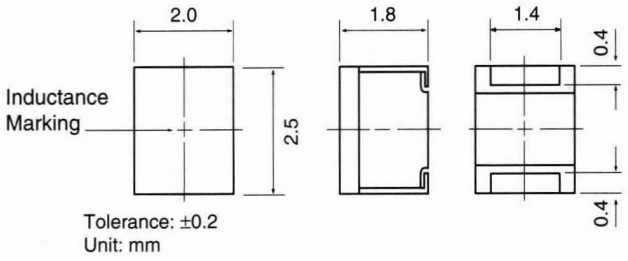


Inductance vs. Frequency



TYPE FSLU2520

Inductance Range: 10nH ~ 220µH
Temperature Range: –40°C +85°C



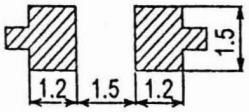
Features

- Typical max Q: 40 ~ 50
- Proprietary wire-wound structure with welded terminations offers high reliability
- Superior sodlerability and high heat-resistance for flow and reflow soldering
- S-parameter data available upon request

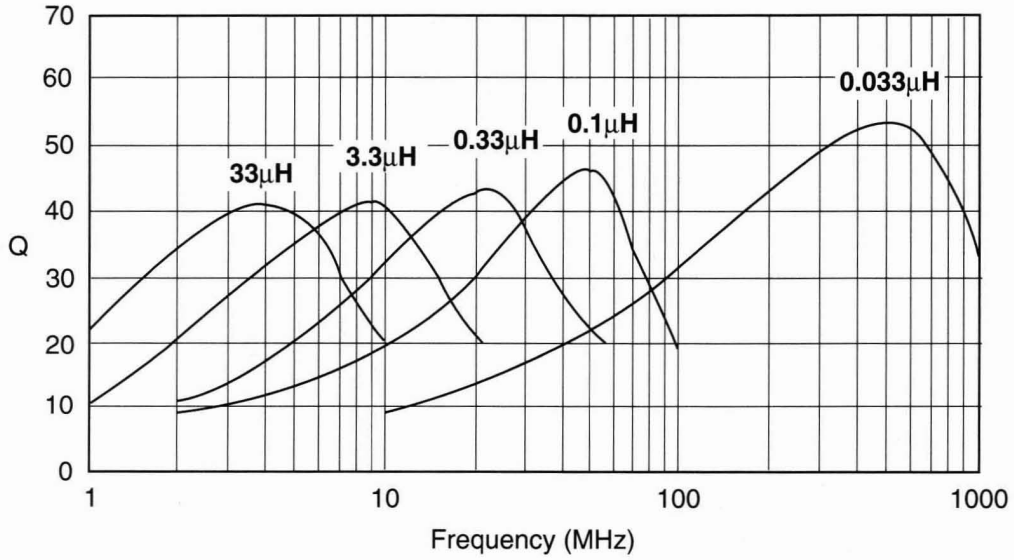
Inductance Tolerance:

0.01 ~ 0.82µH	±10%, ±20%
1.0 ~ 220µH	±5%, ±10%

Recommended patterns:



Q-FREQUENCY CHARACTERISTICS



STANDARD PARTS SELECTION GUIDE

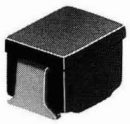
TYPE FSLU2550

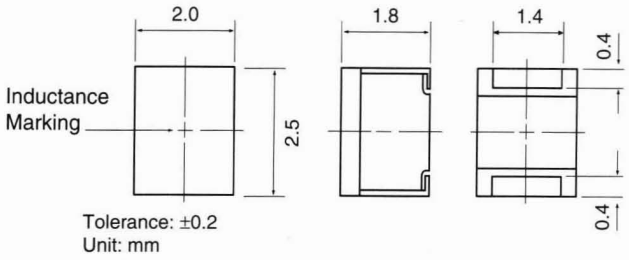
TOKO Part Number	Lo (μH)	Inductance Tolerance	Q Min.	Test Frequency (MHz)	DC Resistance (Ω) Max.	Rated DC Current (mA) Max	Self Resonant Frequency (MHz) Min.
FSLU2520-10N*	0.010	M, K	15	100	0.15	730	2300
FSLU2520-12N*	0.012	M, K	15	100	0.17	690	2100
FSLU2520-15N*	0.015	M, K	15	100	0.19	660	2000
FSLU2520-18N*	0.018	M, K	15	100	0.20	600	1750
FSLU2520-22N*	0.022	M, K	15	100	0.21	550	1550
FSLU2520-27N*	0.027	M, K	15	100	0.25	520	1400
FSLU2520-33N*	0.033	M, K	20	100	0.29	480	1200
FSLU2520-39N*	0.039	M, K	20	100	0.32	460	1100
FSLU2520-47N*	0.047	M, K	20	100	0.34	440	1000
FSLU2520-56N*	0.056	M, K	20	100	0.37	420	900
FSLU2520-68N*	0.068	M, K	20	100	0.41	400	850
FSLU2520-82N*	0.082	M, K	20	100	0.42	390	700
FSLU2520-R10*	0.10	M, K	20	100	0.53	380	500
FSLU2520-R12*	0.12	M, K	30	25.2	0.25	550	720
FSLU2520-R15*	0.15	M, K	30	25.2	0.27	500	570
FSLU2520-R18*	0.18	M, K	30	25.2	0.29	460	540
FSLU2520-R22*	0.22	M, K	30	25.2	0.34	430	480
FSLU2520-R27*	0.27	M, K	30	25.2	0.38	420	425
FSLU2520-R33*	0.33	M, K	30	25.2	0.42	400	360
FSLU2520-R39*	0.39	M, K	30	25.2	0.44	375	290
FSLU2520-R47*	0.47	M, K	30	25.2	0.49	350	260
FSLU2520-R56*	0.56	M, K	30	25.2	0.53	330	230
FSLU2520-R68*	0.68	M, K	30	25.2	0.59	320	200
FSLU2520-R82*	0.82	M, K	30	25.2	0.65	290	180
FSLU2520-1R0*	1.0	K, J	30	7.96	0.89	250	170
FSLU2520-1R2*	1.2	K, J	30	7.96	0.95	235	150
FSLU2520-1R5*	1.5	K, J	30	7.96	1.1	230	130
FSLU2520-1R8*	1.8	K, J	30	7.96	1.2	220	115
FSLU2520-2R2*	2.2	K, J	30	7.96	1.3	210	105
FSLU2520-2R7*	2.7	K, J	30	7.96	1.4	200	85
FSLU2520-3R3*	3.3	K, J	30	7.96	1.7	190	75
FSLU2520-3R9*	3.9	K, J	30	7.96	1.8	185	70
FSLU2520-4R7*	4.7	K, J	30	7.96	2.2	180	60
FSLU2520-5R6*	5.6	K, J	30	7.96	2.3	175	55
FSLU2520-6R8*	6.8	K, J	30	7.96	2.7	165	50
FSLU2520-8R2*	8.2	K, J	30	7.96	2.9	160	40
FSLU2520-100*	10	K, J	25	2.52	2.4	155	33
FSLU2520-120*	12	K, J	25	2.52	2.7	150	30
FSLU2520-150*	15	K, J	25	2.52	3.1	145	27
FSLU2520-180*	18	K, J	25	2.52	3.3	135	24
FSLU2520-220*	22	K, J	25	2.52	3.9	125	22
FSLU2520-270*	27	K, J	25	2.52	4.3	120	21
FSLU2520-330*	33	K, J	25	2.52	5.1	115	20
FSLU2520-390*	39	K, J	25	2.52	5.8	90	16
FSLU2520-470*	47	K, J	25	2.52	10.0	80	15
FSLU2520-560*	56	K, J	25	2.52	11.0	75	13
FSLU2520-680*	68	K, J	25	2.52	12.0	70	12
FSLU2520-820*	82	K, J	25	2.52	14.0	66	11
FSLU2520-101*	100	K, J	15	0.796	19.0	60	10
FSLU2520-121*	120	K, J	15	0.796	20.5	52	8
FSLU2520-151*	150	K, J	15	0.796	24.5	50	8
FSLU2520-181*	180	K, J	15	0.796	28.5	48	7
FSLU2520-221*	220	K, J	15	0.796	31.5	45	7

* Add tolerance to part number: J = 5%, K = 10%, M = 20%

TYPE FSLP2520

Inductance Range: 1µH ~ 47µH (E-6 series)
Temperature Range: –40°C +85°C

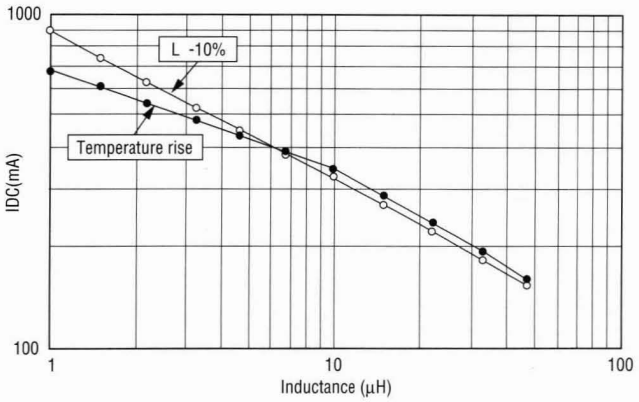




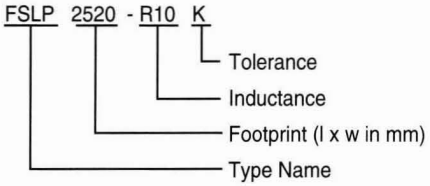
Features

- Low DC resistance
- Proprietary wire-wound structure with welded terminations offers high reliability
- Superior sodlerability and high heat-resistance for flow and reflow soldering
- Packaged on tape and reel in 2000 piece quantity
- S-parameter data available upon request

Rated DC Current



Part Numbering



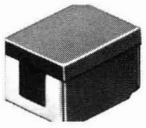
TYPE FSLP2520

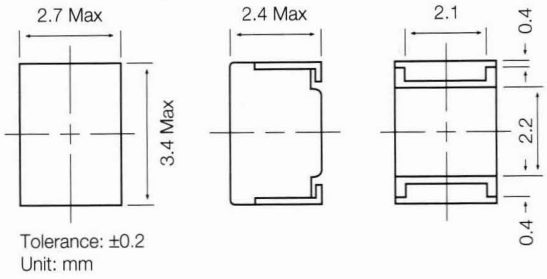
TOKO Part Number	Lo (µH)	Inductance Tolerance	Test Frequency (MHz)	DC Resistance (Ω) Max.		Rated DC Current (mA) Max		Self Resonant Frequency (MHz) Min.	
FSLP2520-1R0M	1.0	±20%	1	0.30	[0.23]	480	[680]	130	[200]
FSLP2520-1R5M	1.5	±20%	1	0.38	[0.29]	435	[605]	95	[135]
FSLP2520-2R2M	2.2	±20%	1	0.44	[0.36]	390	[545]	75	[110]
FSLP2520-3R3M	3.3	±20%	1	0.57	[0.46]	340	[485]	60	[85]
FSLP2520-4R7M	4.7	±20%	1	0.68	[0.56]	310	[435]	50	[70]
FSLP2520-6R8M	6.8	±20%	1	0.89	[0.69]	295	[380]	40	[55]
FSLP2520-100K	10	±10%	1	1.1	[0.86]	220	[325]	33	[48]
FSLP2520-150K	15	±10%	1	1.7	[1.3]	180	[270]	28	[40]
FSLP2520-220K	22	±10%	1	2.5	[1.9]	160	[225]	23	[35]
FSLP2520-330K	33	±10%	1	3.8	[2.9]	130	[185]	18	[27]
FSLP2520-470K	47	±10%	1	5.4	[4.1]	100	[155]	15	[21]

Note: [ ] = Typical value (reference only)

TYPE 32CS

Dip and Reflow Soldering
Inductance Range: 0.01–220µH
Temperature Coefficient: L drift within ±6.5%
Temperature range between –25 to 85°C

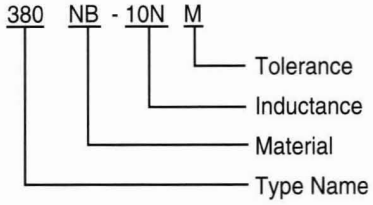




Features

- High inductance up to 220µH, with standard tolerances of ±20% for 10nH-82nH, ±10% or ±20% for 1µH-10µH, and ±5% or ±10% for 10µH-220µH.
- Low temperature coefficient assures minimal drift of values.
- Molded of superior grade resin for mechanical strength, electrical stability, protection from leaching and flux contamination.

Part Numbering



STANDARD PARTS SELECTION GUIDE

(1) Add following tolerance code to part numbers with parenthesis: J=±5%, K=±10%, or M=±20%. All other part numbers are available in "M" tolerance only.
(2) The rated DC current is that which the inductance value decreases 10% by the excitation DC current.

TYPE 32CS

TOKO Part[1] Number	Inductance (µH)	Q (min.)	Test Frequency (MHz)	DC Resistance (Ω) max.	Rated DC Current[2] (mA) max.	Self Resonant Frequency (MHz) min.
380NB-10NM	0.010	18	100	0.100	510	1000
380NB-12NM	0.012	19	100	0.125	490	1000
380NB-15NM	0.015	20	100	0.145	470	1000
380NB-18NM	0.018	20	100	0.165	450	1000
380NB-22NM	0.022	21	100	0.170	430	900
380NB-27NM	0.027	22	100	0.190	410	800
380NB-33NM	0.033	22	100	0.200	390	720
380NB-39NM	0.039	23	100	0.230	380	700
380NB-47NM	0.047	24	100	0.235	360	650
380NB-56NM	0.056	25	100	0.265	340	600
380NB-68NM	0.068	26	100	0.290	320	550
380NB-82NM	0.082	27	100	0.330	300	525
380NB-R10M	0.10	18	25.2	0.38	250	450
380NB-R12M	0.12	18	25.2	0.42	240	300
380NB-R15M	0.15	17	25.2	0.46	230	220
380NB-R18M	0.18	16	25.2	0.50	220	190
380NB-R22M	0.22	15	25.2	0.54	200	160
380NB-R27M	0.27	15	25.2	0.60	190	130
380NB-R33M	0.33	15	25.2	0.65	180	100
380NB-R39M	0.39	14	25.2	0.70	170	95

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TYPE 32CS (cont'd)

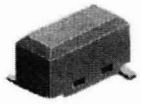
TOKO Part[1] Number	Inductance (μH)	Q (min.)	Test Frequency (MHz)	DC Resistance (Ω) max.	Rated DC Current[2] (mA) max.	Self Resonant Frequency (MHz) min.
380NB-R47M	0.47	13	25.2	0.75	170	85
380NB-R56M	0.56	12	25.2	0.84	160	75
380NB-R68M	0.68	12	25.2	0.92	150	70
380NB-R82M	0.82	12	25.2	1.01	140	65
380LB-1R0(K,M)	1.0	30	7.96	0.42	235	150
380LB-1R2(K,M)	1.2	30	7.96	0.46	225	110
380LB-1R5(K,M)	1.5	30	7.96	0.51	200	75.0
380LB-1R8(K,M)	1.8	30	7.96	0.56	190	57.5
380LB-2R2(K,M)	2.2	30	7.96	0.63	180	45.0
380LB-2R7(K,M)	2.7	30	7.96	0.71	178	37.0
380LB-3R3(K,M)	3.3	30	7.96	0.78	175	32.5
380LB-3R9(K,M)	3.9	30	7.96	0.86	170	29.5
380LB-4R7(K,M)	4.7	30	7.96	0.94	160	27.0
380LB-5R6(K,M)	5.6	30	7.96	1.43	127	24.0
380LB-6R8(K,M)	6.8	30	7.96	1.63	125	20.5
380LB-8R2(K,M)	8.2	30	7.96	1.76	120	19.0
380KB-100(J,K)	10	30	2.52	1.76	118	18.5
380KB-120(J,K)	12	30	2.52	2.02	93.0	17.0
380KB-150(J,K)	15	30	2.52	2.28	85.0	15.5
380KB-180(J,K)	18	30	2.52	2.54	80.0	14.5
380KB-220(J,K)	22	30	2.52	4.03	73.3	11.5
380KB-270(J,K)	27	30	2.52	4.55	68.3	11.5
380KB-330(J,K)	33	30	2.52	5.20	61.7	10.5
380KB-390(J,K)	39	30	2.52	5.59	56.7	9.50
380KB-470(J,K)	47	30	2.52	8.06	51.7	9.00
380KB-560(J,K)	56	30	2.52	9.10	43.3	8.25
380KB-680(J,K)	68	30	2.52	13.4	42.5	8.00
380KB-820(J,K)	82	30	2.52	14.3	37.5	6.00
380HB-101(J,K)	100	18	0.796	14.3	37.3	5.75
380HB-121(J,K)	120	18	0.796	16.3	35.0	5.00
380HB-151(J,K)	150	18	0.796	19.5	32.0	4.40
380HB-181(J,K)	180	18	0.796	20.8	31.0	4.25
380HB-221(J,K)	220	18	0.796	23.4	30.0	3.90

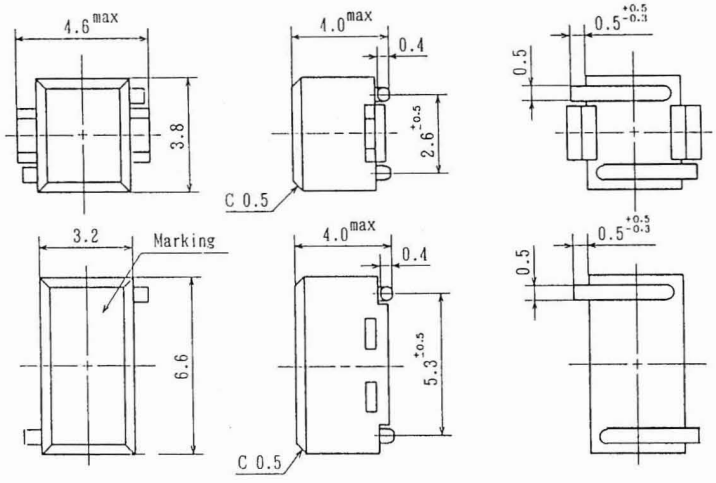
TYPE 33CS/36CS

For Reflow Soldering
Inductance Range: 6.8–49.8nH

33CS

36CS





Tolerance: ±0.2
Unit: mm

Features

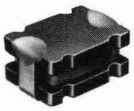
- Machine autoplaceable
- High Q
- Excellent environmental and mechanical characteristics

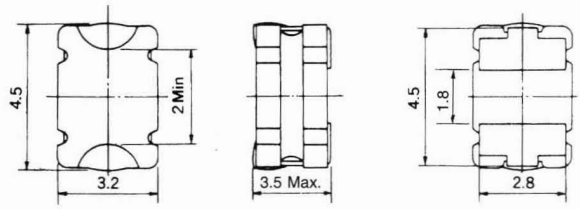
STANDARD PARTS SELECTION GUIDE

TOKO Part Number	Winding Turns	Inductance nH	Tolerance (%)	Testing Q (min.)	Self Res. Frequency (MHz min.)	Rated DC Frequency (MHz min.)	Current (mA max.)
TYPE 33CS							
Y655LY-01K	1.5	6.8	±10	70	150	3,000	1,000
Y655LY-02K	2.5	10.5	±10	75	150	3,000	1,000
Y655LY-03K	3.5	15.3	±10	75	150	3,000	1,000
Y655LY-04K	4.5	21.6	±10	75	150	2,500	1,000
TYPE 36CS							
656LZ-05K	5.5	22.0	±10	85	150	2,500	1,000
656LZ-06K	6.5	27.5	±10	85	150	2,200	1,000
656LZ-07K	7.5	33.1	±10	85	150	2,000	1,000
656LZ-08K	8.5	41.1	±10	85	150	2,000	1,000
656LZ-09K	9.5	49.8	±10	85	150	1,700	1,000

TYPE 43CS, 43FS

For Reflow Soldering (43FS)
For Dip Soldering (43CS)
Inductance Range: 1µH-1mH
Temperature Coefficient of : –200 to 1000ppm/°C





Unit: mm

Features

- Ideal for hybrid and traditional circuits due to its high Q for size.
- Specially developed ferrite core materials have high frequency response for wider frequency range.
- Compact package. Conforms to SMTA standard size code B, for automatic assembly equipment.

STANDARD PARTS SELECTION GUIDE

(1) Add following tolerance code to part numbers with parenthesis: J=±5%, K=±10%, or M=±20%. All other part numbers are available in "M" tolerance only.

TYPE 43CS

TOKO Part[1] Number	Inductance[1] (µH)	Q (min.)	Test Frequency (MHz)	DC Resistance (Ω) max.	Rated DC Current[2] (mA) max.	Self Resonant Frequency (MHz) min.
300LS-1R0 M(K)=C	1.0	50	7.96	0.42	250	128
300LS-1R2 M(K)=C	1.2	50	7.96	0.46	240	99
300LS-1R5 M(K)=C	1.5	50	7.96	0.49	230	87
300LS-1R8 M(K)=C	1.8	50	7.96	0.55	220	74
300LS-2R2 M(K)=C	2.2	50	7.96	0.59	200	66
300LS-2R7 M(K)=C	2.7	50	7.96	0.68	190	52
300LS-3R3 M(K)=C	3.3	50	7.96	0.75	180	43
300LS-3R9 M(K)=C	3.9	50	7.96	0.81	160	37
300LS-4R7 M(K)=C	4.7	50	7.96	0.89	160	33
300LS-5R6 M(K)=C	5.6	50	7.96	0.98	150	29
300LS-6R8 M(K)=C	6.8	50	7.96	1.10	150	24
300LS-8R2 M(K)=C	8.2	50	7.96	1.20	150	21
300LS-100 M(K)=C	10.0	50	7.96	1.29	145	18
300LS-120 K(J)=C	12.0	50	2.52	1.43	140	15
300LS-150 K(J)=C	15.0	50	2.52	1.56	130	14
300LS-180 K(J)=C	18.0	50	2.52	1.77	125	13
300LS-220 K(J)=C	22.0	50	2.52	1.99	115	11
300LS-270 K(J)=C	27.0	50	2.52	2.21	105	9
300LS-330 K(J)=C	33.0	50	2.52	2.38	100	9
300LS-390 K(J)=C	39.0	50	2.52	2.86	95	8
300LS-470 K(J)=C	47.0	50	2.52	3.19	85	8
300LS-560 K(J)=C	56.0	50	2.52	3.52	85	8
300LS-680 K(J)=C	68.0	50	2.52	3.92	75	7
300LS-820 K(J)=C	82.0	50	2.52	4.42	75	6
300LS-101 K(J)=C	100.0	50	2.52	4.97	70	5

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TYPE 43CS

TOKO Part[1] Number	Inductance[1] (μH)	Q (min.)	Test Frequency (MHz)	DC Resistance (Ω) max.	Rated DC Current[2] (mA) max.	Self Resonant Frequency (MHz) min.
300HS-121 K(J)=C	120.0	50	0.796	4.24	70	5
300HS-151 K(J)=C	150.0	50	0.796	4.84	65	4
300HS-181 K(J)=C	180.0	50	0.796	5.58	60	4
300HS-221 K(J)=C	220.0	50	0.796	6.13	60	4
300HS-271 K(J)=C	270.0	50	0.796	7.12	55	3
300HS-331 K(J)=C	330.0	50	0.796	8.10	50	3
300HS-391 K(J)=C	390.0	50	0.796	10.4	50	2.5
300HS-471 K(J)=C	470.0	50	0.796	11.4	45	2.5
*300SS-561 K(J)=C	560.0	50	0.796	12.8	45	1.5
*300SS-681 K(J)=C	680.0	50	0.796	14.6	40	1.5
*300SS-821 K(J)=C	820.0	50	0.796	16.5	30	1.0
*300SS-102 K(J)=C	1000.0	50	0.796	18.6	30	1.0

*: Higher dimension

STANDARD PARTS SELECTION GUIDE

(1) Add following tolerance code to Part No. within ( ): J=±5%, K=±10%, or M=±20%

(2) The rated DC current which the part temperature rises 20°C by the excitation DC current from room temperature (20°).

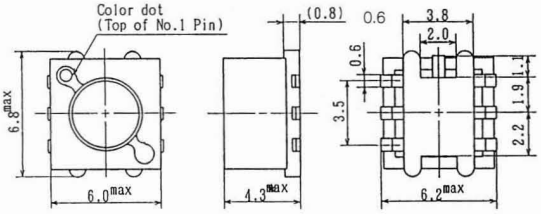
TYPE 43FS

TOKO Part[1] Number	Inductance[1] (μH)	Q (min.)	Test Frequency (MHz)	DC Resistance (Ω) max.	Rated DC Current[2] (mA) max.	Self Resonant Frequency (MHz) min.
300LS-1R0 M(K)	1.0	50	7.96	0.42	250	150
300LS-1R2 M(K)	1.2	50	7.96	0.46	240	120
300LS-1R5 M(K)	1.5	50	7.96	0.49	230	105
300LS-1R8 M(K)	1.8	50	7.96	0.55	220	90
300LS-2R2 M(K)	2.2	50	7.96	0.59	200	80
300LS-2R7 M(K)	2.7	50	7.96	0.68	190	63
300LS-3R3 M(K)	3.3	50	7.96	0.75	180	53
300LS-3R9 M(K)	3.9	50	7.96	0.81	160	45
300LS-4R7 M(K)	4.7	50	7.96	0.89	160	40
300LS-5R6 M(K)	5.6	50	7.96	0.98	150	35
300LS-6R8 M(K)	6.8	50	7.96	1.10	150	30
300LS-8R2 M(K)	8.2	50	7.96	1.20	150	26
300LS-100 M(K)	10.0	50	7.96	1.29	145	22
300LS-120 K(J)	12.0	50	2.52	1.43	140	19
300LS-150 K(J)	15.0	50	2.52	1.56	130	17
300LS-180 K(J)	18.0	50	2.52	1.77	125	16
300LS-220 K(J)	22.0	50	2.52	1.99	115	14
300LS-270 K(J)	27.0	50	2.52	2.21	105	12
300LS-330 K(J)	33.0	50	2.52	2.38	100	12
300LS-390 K(J)	39.0	50	2.52	2.86	95	10
300LS-470 K(J)	47.0	50	2.52	3.19	85	10
300LS-560 K(J)	56.0	50	2.52	3.52	85	9.6
300LS-680 K(J)	68.0	50	2.52	3.92	75	8.7
300LS-820 K(J)	82.0	50	2.52	4.42	75	7.7
300LS-101 K(J)	100.0	50	2.52	4.97	70	6.9
300HS-121 K(J)	120.0	50	0.796	4.24	70	6.5
300HS-151 K(J)	150.0	50	0.796	4.83	65	5.8
300HS-181 K(J)	180.0	50	0.796	5.58	60	5.3
300HS-221 K(J)	220.0	50	0.796	6.13	60	4.8
300HS-271 K(J)	270.0	50	0.796	7.12	55	4.5
300HS-331 K(J)	330.0	50	0.796	8.10	50	4.0
300HS-391 K(J)	390.0	50	0.796	10.40	50	3.4
300HS-471 K(J)	470.0	50	0.796	11.40	45	3.1
*300SS-561 K(J)	560.0	50	0.796	12.80	45	2.02
*300SS-681 K(J)	680.0	50	0.796	14.60	40	1.93
*300SS-821 K(J)	820.0	50	0.796	16.50	40	1.78
*300SS-102 K(J)	1000.0	50	0.796	18.60	40	1.62

*: Dimensions; Height

TYPE 5CA

For Reflow Soldering
Frequency Range: 10-500KHz
Inductance Range: 0.1-7mH



Unit: mm

*** 3, 5 mm height also available**

Features

- Package design is ideal for automatic assembly.
- Available with up to 7 terminals to provide secondary winding or taps, and function as DC/DC step up transformer.

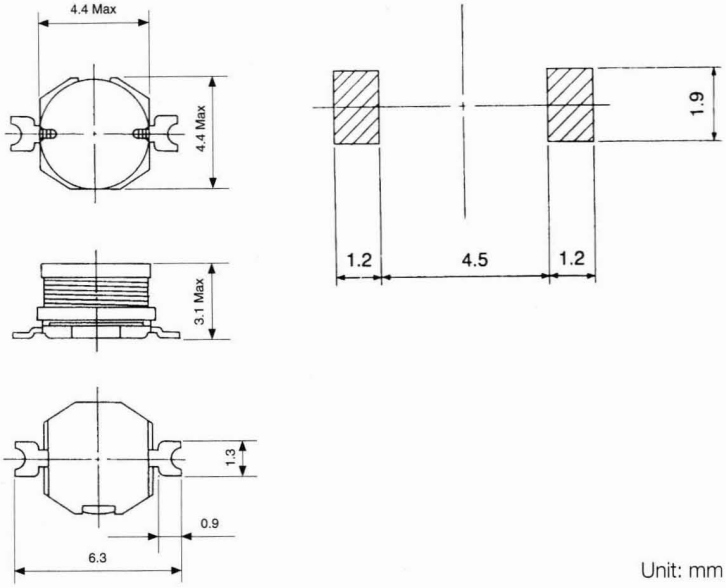
STANDARD PARTS SELECTION GUIDE

TYPE 5CA

TOKO Part Number	Inductance	Q (min.)	DC Resistance (ohm)	Test Frequency (KHz)	Rated DC Current (mA)
395GN-0078IB	100µH±20%	40	1.1 max.	796	188 max.
395GN-0079IB	120µH±20%	40	1.2 max.	796	167 max.
395GN-0080IB	150µH±20%	40	1.4 max.	796	155 max.
395GN-0081IB	180µH±20%	40	1.5 max.	796	148 max.
395GN-0082IB	220µH±20%	40	1.7 max.	796	140 max.
395GN-0083IB	270µH±20%	40	1.9 max.	796	117 max.
395GN-0084IB	330µH±20%	40	2.2 max.	796	112 max.
395GN-0085IB	390µH±20%	40	2.5 max.	796	100 max.
395GN-0086IB	470µH±20%	40	3.3 max.	796	85 max.
395GN-0087IB	560µH±20%	40	3.6 max.	796	78 max.
395GN-0088IB	680µH±20%	40	4.0 max.	796	76 max.
395GN-0089IB	820µH±20%	40	5.5 max.	796	71 max.
395GN-0090IB	1.0mH±20%	70	7.3 max.	252	57 max.
395GN-0091IB	1.2mH±20%	70	8.7 max.	252	54 max.
395GN-0092IB	1.5mH±20%	70	12.3 max.	252	45 max.
395GN-0093IB	1.8mH±20%	70	14.2 max.	252	42 max.
395GN-0094IB	2.2mH±20%	70	15.6 max.	252	38 max.
395GN-0095IB	2.7mH±20%	70	24.0 max.	252	35 max.
395GN-0096IB	3.3mH±20%	70	26.6 max.	252	32 max.
395GN-0097IB	3.9mH±20%	70	30.2 max.	252	28 max.
395GN-0098IB	4.7mH±20%	70	33.6 max.	252	24 max.
395GN-0099IB	5.6mH±20%	70	36.0 max.	252	21 max.
395GN-0100IB	6.8mH±20%	70	49.0 max.	252	17 max.

TYPE 3DF

For Reflow Soldering
Inductance Range: 1.0µH - 270µH
Operating Frequency: 10KHz - 1MHz



Unit: mm

Features

- Miniature, low profile DC/DC choke.
- Supplied on tape and reel for auto assembly.

STANDARD PARTS SELECTION GUIDE

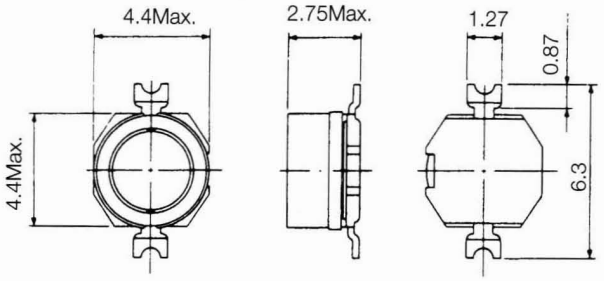
(1) The Rated DC current is that which the inductance value decreases 10% by the excitation DC current or which the Temperature rises to 40° C excitation DC current, whichever is lower.

TYPE 3DF (Unshielded)

TOKO Part Number	Inductance (µH)	Test Frequency (KHz)	DC Current[1] (A max.)	DC Resistance (Ω max.)	Max Operating Frequency
A682AY-1R0M	1.0±20%	100	1.34	0.072	1MHz
A662AY-1R5M	1.5±20%	100	1.22	0.084	1MHz
A682AY-2R2M	2.2±20%	100	1.08	0.108	1MHz
A682AY-3R3M	3.3±20%	100	0.97	0.134	1MHz
A682AY-4R7M	4.7±20%	100	0.91	0.160	1MHz
A682AY-6R8M	6.8±20%	100	0.79	0.197	1MHz
A682AE-100M	10.0±20%	100	0.63	0.330	1MHz
A682AE-120M	12.0±20%	100	0.59	0.350	1MHz
A682AE-150M	15.0±20%	100	0.56	0.400	1MHz
A682AE-180M	18.0±20%	100	0.51	0.450	1MHz
A682AE-220M	22.0±20%	100	0.47	0.534	1MHz
A682AE-270M	27.0±20%	100	0.43	0.618	1MHz
A682AE-330M	33.0±20%	100	0.37	0.903	1MHz
A682AE-390M	39.0±20%	100	0.34	1.010	1MHz
A682AE-470M	47.0±20%	100	0.29	1.355	1MHz
A682AE-560M	56.0±20%	100	0.28	1.515	1MHz
A682AE-680M	68.0±20%	100	0.26	1.713	1MHz
A682AE-820M	82.0±20%	100	0.22	2.312	1MHz
A682AE-101M	100.0±20%	100	0.21	2.640	1MHz
A682AE-121M	120.0±20%	100	0.19	3.502	1MHz
A682AE-151M	150.0±20%	100	0.17	4.132	1MHz
A682AE-181M	180.0±20%	100	0.16	4.534	1MHz
A682AE-221M	220.0±20%	100	0.13	6.646	1MHz
A682AE-271M	270.0±20%	100	0.12	7.523	1MHz

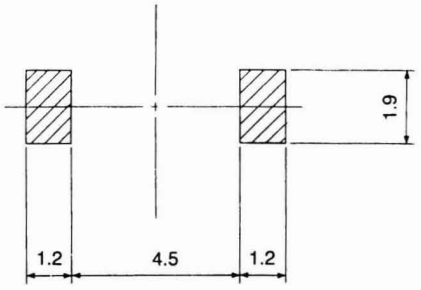
TYPE 3DM

For Reflow Soldering
Frequency Range: 10KHz - 100KHz
Inductance Range: 100µH - 4.7mH



Features

- Low profile SMD Type (4mm square, 2.75mm high)
- High inductance and yet miniature size
- Suitable for reflow soldering



Unit: mm

STANDARD PARTS SELECTION GUIDE

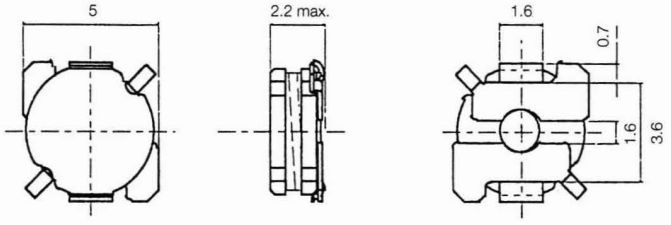
(1) Inductance is measured by LCR-meter 4284A (hp) or equivalent.
(2) DC Resistance is measured by Digital Multimeter TR6871 (Advantest) or equivalent.
(3) The rated DC current is that which the inductance value decreases 10% by the excitation DC current or which the temperature rises to 40°C by excitation DC current, whichever is lower. (in case of 20°)

TYPE 3DM (Shielded)

TOKO Part Number	Inductance (mH)	Tolerance (%)	Q min.	DC Resistance (Ω max.)	DC Current (3) (mA) max.
667MA-101N	0.10	±30	30	0.65	32
667MA-151N	0.15	±30	35	0.80	28
667MA-221N	0.22	±30	35	1.10	22
667MA-331N	0.33	±30	35	1.30	16
667MA-471N	0.47	±30	35	1.90	14
667MA-681N	0.68	±30	35	1.90	11
667MA-102N	1.00	±30	35	3.10	9
667MA-152N	1.50	±30	35	5.30	8
667MA-222N	2.20	±30	35	8.40	7
667MA-332N	3.30	±30	35	10.0	5
667MA-472N	4.70	±30	35	13.0	4

TYPE D52FU

Frequency Range: 1KHz - 2MHz
Inductance Range: 100µH - 6800µH



Unit: mm

Features

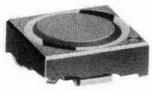
- Low profile (2.0mm typ. Height) and 5mm square
- Ideal for IC inverter EL lamp driver applications
- Magnetically shielded version, unshielded also available
- Available on tape and reel for auto-insertion
- Suitable for reflow soldering

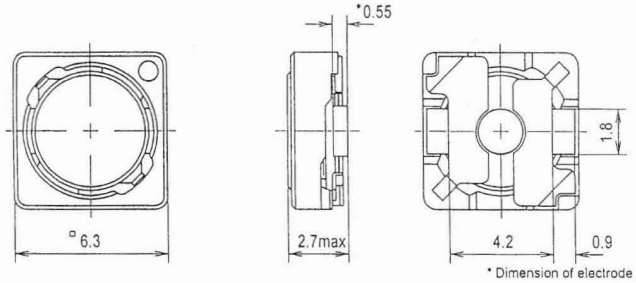
TYPE D52FU

TOKO Part Number	Inductance (µH) ±20%	Rated DC (Ω) Max	IDC Spec (mA) Max
875FU-101M	100	1.6	75
875FU-121M	120	1.9	84
875FU-131M	130	2.7	91
875FU-151M	150	3.0	102
875FU-221M	220	3.8	126
875FU-331M	330	5.1	138
875FU-391M	390	7.1	150
875FU-471M	470	8.1	156
875FU-561M	560	11	168
875FU-681M	680	13	186
875FU-821M	320	15	198
875FU-102M	1000	20	276
875FU-122M	1200	22	228
875FU-152M	1500	27	264
875FU-182M	1800	33	276
875FU-222M	2200	39	340
875FU-272M	2700	45	390
875FU-332M	3300	62	480
875FU-392M	3900	71	520
875FU-472M	2700	96	624
875FU-562M	5600	110	672
875FU-682M	6800	130	690

TYPE D62C

Frequency Range: 10KHz - 1MHz
Inductance Range: 1 ~ 47µH





Unit: mm
Tolerance : ±0.3

Features

- Low profile (2.7mm Max. high) and 6.6mm square.
- Magnetically shielded version; unshielded also available
- Suitable for large current
- Ideal for a variety of DC-DC converter inductor applications.

STANDARD PARTS SELECTION GUIDE

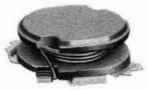
(1) Inductance is measured by LCR-meter 4284A (hp) or equivalent.
(2) DC Resistance is measured by Digital Multimeter TR6871 (Advantest) or equivalent.
(3) The rated DC current is that which the inductance value decreases 10% by the excitation DC current or which the temperature rises to 40°C by excitation DC current, whichever is lower. (in case of 20°)

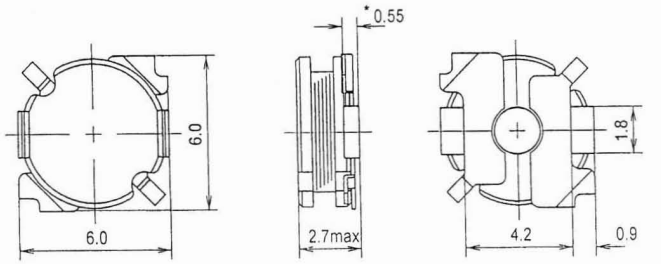
TYPE D62C (Shielded)

TOKO Part Number	Inductance (1) L (µH)	Tolerance (%)	Test Frequency (kHz)	DC Resistance (2) (Ω) max.	Related DC Current (3) (A) max.
847CY-1R0M	1.0	±20	100	0.019	2.87
847CY-1R5M	1.5	±20	100	0.024	2.43
847CY-2R4M	2.4	±20	100	0.034	1.92
847CY-3R0M	3.0	±20	100	0.039	1.70
847CY-3R9M	3.9	±20	100	0.045	1.54
847CY-4R7M	4.7	±20	100	0.048	1.43
847CY-6R2M	6.2	±20	100	0.065	1.22
847CY-6R8M	6.8	±20	100	0.079	1.12
847CY-100M	10.0	±20	100	0.097	0.99
847CY-120M	12.0	±20	100	0.137	0.87
847CY-150M	15.0	±20	100	0.155	0.78
847CY-180M	18.0	±20	100	0.200	0.71
847CY-220M	22.0	±20	100	0.225	0.63
847CY-270M	27.0	±20	100	0.265	0.56
847CY-330M	33.0	±20	100	0.325	0.53
847CY-390M	39.0	±20	100	0.416	0.48
847CY-470M	47.0	±20	100	0.418	0.45

TYPE D62F

Frequency Range: 10KHz - 1MHz
Inductance Range: 1 ~ 47µH





* Dimension of electrode

Unit: mm
Tolerance : ±0.3

Features

- Low profile (2.7mm Max. high) and 6.6mm square.
- Unshielded version; magnetically shielded also available
- Suitable for large current
- Ideal for a variety of DC-DC converter inductor applications.

STANDARD PARTS SELECTION GUIDE

(1) Inductance is measured by LCR-meter 4284A (hp) or equivalent.
(2) DC Resistance is measured by Digital Multimeter TR6871 (Advantest) or equivalent.
(3) The rated DC current is that which the inductance value decreases 10% by the excitation DC current or which the temperature rises to 40°C by excitation DC current, whichever is lower. (in case of 20°)

TYPE D62F (Unshielded)

TOKO Part Number	Inductance (1) L (µH)	Tolerance (%)	Test Frequency (kHz)	DC Resistance (2) (Ω) max.	Related DC Current (3) (A) max.
847FY-1R0M	1.0	±20	100	0.021	2.73
847FY-1R5M	1.5	±20	100	0.026	2.55
847FY-2R4M	2.4	±20	100	0.037	2.51
847FY-3R0M	3.0	±20	100	0.042	2.00
847FY-3R9M	3.9	±20	100	0.047	1.90
847FY-4R7M	4.7	±20	100	0.053	1.77
847FY-6R2M	6.2	±20	100	0.073	1.47
847FY-6R8M	6.8	±20	100	0.075	1.36
847FY-100M	10.0	±20	100	0.110	1.20
847FY-120M	12.0	±20	100	0.120	1.15
847FY-150M	15.0	±20	100	0.168	0.90
847FY-180M	18.0	±20	100	0.225	0.74
847FY-220M	22.0	±20	100	0.245	0.70
847FY-270M	27.0	±20	100	0.310	0.66
847FY-330M	33.0	±20	100	0.354	0.65
847FY-390M	39.0	±20	100	0.408	0.61
847FY-470M	47.0	±20	100	0.472	0.57

TYPE D73F/C, D75F/C, D73LF/LC

For Reflow Soldering
Frequency Range: 10KHz~1MHz
Inductance Range: 1-560µH

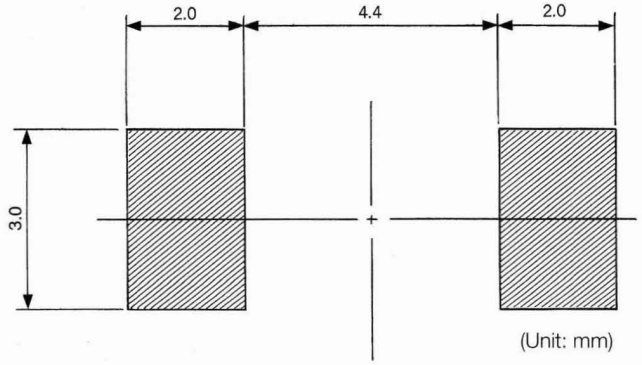
D73F D73C D75F D75C D73LF D73LC

Features

- Miniature surface mount type
- Low profile (3.0 ~ 5.1mm max height)
- Inductance range: 1-560µH
- Available in magnetically shielded or unshielded versions
- Supplied on tape and reel for auto insertion
- Ideal for a variety of DC-DC Converter inductor applications

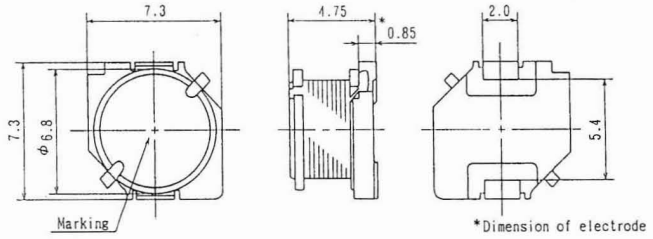
Measurement Condition

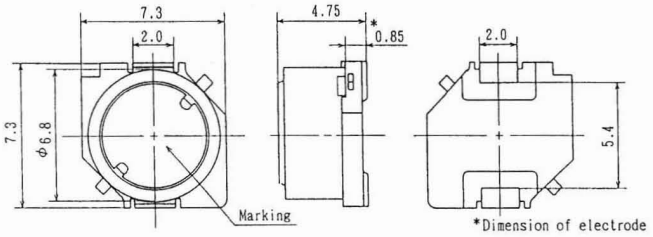
- The Rated DC current is that which the inductance value decreases 10% by the excitation DC current, or which the temperature rises to 40°C by excitation DC current, whichever is lower.



(Unit: mm)

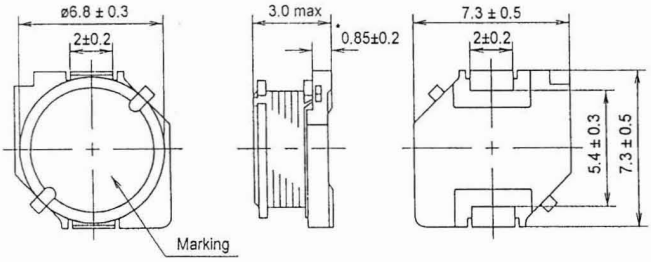
D73F/C, D75F/C

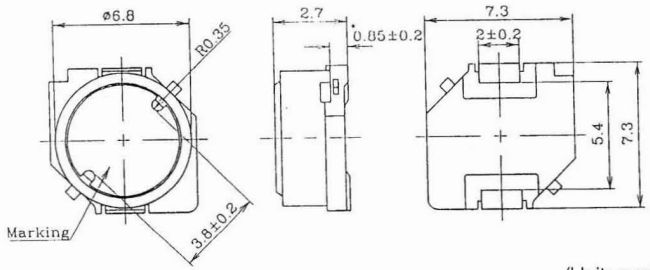




NOTES(*): D73F/C: 3.2 mm max
D75F/C: 4.8 mm max

D73LF/LC





(Unit: mm)

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STANDARD PARTS SELECTION GUIDE

(1) The rated DC current is that which the inductance value decreases 10% by the excitation DC current, measured at 1kHz by universal bridge or equivalent.
(2) Rated DC current is for reference only.

TYPE D73F SERIES (Unshielded)

TOKO Part Number	Inductance (μH)	L Tolerance	Test Frequency KHz	DC Resistance Ω (max.)	DC Current(1) (2) A (max.)
636FY-1R0M	1.00	±20%	100	0.022	2.88
636FY-1R5M	1.50	±20%	100	0.026	2.67
636FY-2R2M	2.20	±20%	100	0.032	2.40
636FY-3R3M	3.30	±20%	100	0.041	2.08
636FY-4R7M	4.70	±20%	100	0.049	1.92
636FY-6R8M	6.80	±20%	100	0.067	1.60
636FY-100M	10.0	±20%	100	0.085	1.41
636FY-120M	12.0	±20%	100	0.100	1.28
636FY-150M	15.0	±20%	100	0.130	1.12
636FY-180M	18.0	±20%	100	0.160	1.00
636FY-220M	22.0	±20%	100	0.018	0.93
636FY-270M	27.0	±20%	100	0.240	0.80
636FY-330M	33.0	±20%	100	0.290	0.72
636FY-390M	39.0	±20%	100	0.340	0.66
636FY-470M	47.0	±20%	100	0.410	0.59
636FY-560M	56.0	±20%	100	0.480	0.55
636FY-680M	68.0	±20%	100	0.600	0.49
636FY-820M	82.0	±20%	100	0.710	0.44
636FY-101M	100	±20%	100	0.950	0.38

TYPE D73C SERIES (With Ferrite Shield)

TOKO Part Number	Inductance (μH)	L Tolerance	Test Frequency KHz	DC Resistance Ω (max.)	DC Current(1) (2) A (max.)
636CY-1R0M	1.00	±20%	100	0.019	3.12
636CY-1R5M	1.50	±20%	100	0.023	2.85
636CY-2R2M	2.20	±20%	100	0.028	2.66
636CY-3R3M	3.30	±20%	100	0.035	2.26
636CY-4R7M	4.70	±20%	100	0.043	1.96
636CY-6R8M	6.80	±20%	100	0.055	1.76
636CY-100M	10.0	±20%	100	0.080	1.34
636CY-120M	12.0	±20%	100	0.090	1.23
636CY-150M	15.0	±20%	100	0.120	1.09
636CY-180M	18.0	±20%	100	0.130	0.99
636CY-220M	22.0	±20%	100	0.150	0.90
636CY-270M	27.0	±20%	100	0.210	0.81
636CY-330M	33.0	±20%	100	0.250	0.72
636CY-390M	39.0	±20%	100	0.310	0.67
636CY-470M	47.0	±20%	100	0.350	0.60
636CY-560M	56.0	±20%	100	0.430	0.55
636CY-680M	68.0	±20%	100	0.520	0.50
636CY-820M	82.0	±20%	100	0.600	0.46
636CY-101M	100	±20%	100	0.790	0.41

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STANDARD PARTS SELECTION GUIDE

TYPE D75F Series (Unshielded)

TOKO Part Number	Inductance (μH)	L Tolerance	Test Frequency KHz	DC Resistance Ω (max.)	DC Current[1] [2] A (max.)
646FY-1R0M	1.00	±20%	100	0.023	2.88
646FY-1R5M	1.50	±20%	100	0.028	2.56
646FY-2R2M	2.20	±20%	100	0.032	2.36
646FY-3R3M	3.30	±20%	100	0.038	2.16
646FY-4R7M	4.70	±20%	100	0.049	1.88
646FY-6R8M	6.80	±20%	100	0.060	1.68
646FY-100M	10.0	±20%	100	0.070	1.56
646FY-120M	12.0	±20%	100	0.080	1.44
646FY-150M	15.0	±20%	100	0.090	1.36
646FY-180M	18.0	±20%	100	0.100	1.28
646FY-220M	22.0	±20%	100	0.120	1.17
646FY-270M	27.0	±20%	100	0.140	1.07
646FY-330M	33.0	±20%	100	0.160	1.00
646FY-390M	39.0	±20%	100	0.190	0.91
646FY-470M	47.0	±20%	100	0.220	0.84
646FY-560M	56.0	±20%	100	0.290	0.72
646FY-680M	68.0	±20%	100	0.340	0.66
646FY-820M	82.0	±20%	100	0.460	0.58
646FY-101M	100	±20%	100	0.550	0.51
646FY-121K	120	±10%	100	0.670	0.42
646FY-151K	150	±10%	100	0.900	0.37
646FY-181K	180	±10%	100	1.050	0.35
646FY-221K	220	±10%	100	1.350	0.29
646FY-271K	270	±10%	100	1.550	0.28
646FY-331K	330	±10%	100	2.050	0.23
646FY-391K	390	±10%	100	2.300	0.215
646FY-471K	470	±10%	100	2.600	0.195

TYPE D75C Series (With Ferrite Shield)

TOKO Part Number	Inductance (μH)	L Tolerance	Test Frequency KHz	DC Resistance Ω (max.)	DC Current[1] [2] A (max.)
646CY-1R0M	1.00	±20%	100	0.023	2.88
646CY-1R5M	1.50	±20%	100	0.027	2.61
646CY-2R2M	2.20	±20%	100	0.030	2.46
646CY-3R3M	3.30	±20%	100	0.035	2.28
646CY-4R7M	4.70	±20%	100	0.041	2.08
646CY-6R8M	6.80	±20%	100	0.047	1.94
646CY-100M	10.0	±20%	100	0.050	1.68
646CY-120M	12.0	±20%	100	0.070	1.54
646CY-150M	15.0	±20%	100	0.080	1.39
646CY-180M	18.0	±20%	100	0.090	1.26
646CY-220M	22.0	±20%	100	0.110	1.13
646CY-270M	27.0	±20%	100	0.150	1.02
646CY-330M	33.0	±20%	100	0.170	0.84
646CY-390M	39.0	±20%	100	0.180	0.80
646CY-470M	47.0	±20%	100	0.200	0.76
646CY-560M	56.0	±20%	100	0.280	0.64
646CY-680M	68.0	±20%	100	0.320	0.60
646CY-820M	82.0	±20%	100	0.350	0.57
646CY-101M	100	±20%	100	0.400	0.50
646CY-121M	120	±20%	100	0.44	0.47
646CY-151M	150	±20%	100	0.73	0.40
646CY-181M	180	±20%	100	0.78	0.39
646CY-221M	220	±20%	100	0.94	0.33
646CY-271M	270	±20%	100	1.25	0.31
646CY-331M	330	±20%	100	1.40	0.27
646CY-391M	390	±20%	100	1.52	0.27
646CY-471M	470	±20%	100	1.70	0.25
646CE-561M	560	±20%	100	2.39	0.22

STANDARD PARTS SELECTION GUIDE

(1) The rated DC current is that which the inductance value decreases 10% by the excitation DC current, measured at 1kHz by universal bridge or equivalent.
(2) Rated DC current is for reference only.

TYPE D73LF (Unshielded)

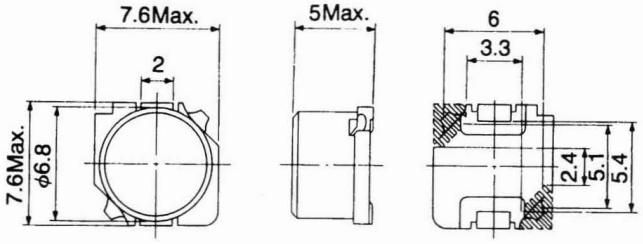
TOKO Part Number	Inductance L (μH)	Tolerance	Test Frequency KHz	DC Resistance Ω (max.)	A (max.) (1) (2)
817FY-1R0M	1.00	±20%	100	0.02	3.60
817FY-1R5M	1.50	±20%	100	0.03	3.40
817FY-2R2M	2.20	±20%	100	0.03	2.68
817FY-3R3M	3.30	±20%	100	0.04	2.40
817FY-4R7M	4.70	±20%	100	0.06	2.26
817FY-6R8M	6.80	±20%	100	0.08	1.66
817FY-100M	10.0	±20%	100	0.12	1.37
817FY-120M	12.0	±20%	100	0.14	1.12
817FY-150M	15.0	±20%	100	0.18	1.08
817FY-180M	18.0	±20%	100	0.20	1.04
817FY-220M	22.0	±20%	100	0.27	0.80
817FY-270M	27.0	±20%	100	0.32	0.77
817FY-330M	33.0	±20%	100	0.35	0.71
817FY-390M	39.0	±20%	100	0.48	0.62
817FY-470M	47.0	±20%	100	0.56	0.56
817FY-560M	56.0	±20%	100	0.63	0.54
817FY-680M	68.0	±20%	100	0.71	0.50
817FY-820M	82.0	±20%	100	0.97	0.43
817FY-101M	100	±20%	100	1.08	0.39

TYPE D73LC (Shielded)

TOKO Part Number	Inductance L (μH)	Tolerance	Test Frequency KHz	DC Resistance Ω (max.)	A (max.) (1) (2)
817CY-1R0M	1.2	±20%	100	0.02	2.72
817CY-1R5M	1.8	±20%	100	0.02	2.26
817CY-2R2M	2.4	±20%	100	0.03	1.91
817CY-3R3M	3.3	±20%	100	0.03	1.68
817CY-4R7M	4.7	±20%	100	0.04	1.28
817CY-6R8M	6.8	±20%	100	0.05	1.06
817CY-100M	10.0	±20%	100	0.08	1.04
817CY-120M	12.0	±20%	100	0.10	0.84
817CY-150M	15.0	±20%	100	0.11	0.77
817CY-180M	18.0	±20%	100	0.13	0.67
817CY-220M	22.0	±20%	100	0.18	0.62
817CY-270M	27.0	±20%	100	0.20	0.57
817CY-330M	33.0	±20%	100	0.26	0.51
817CY-390M	39.0	±20%	100	0.30	0.46
817CY-470M	47.0	±20%	100	0.41	0.45
817CY-560M	56.0	±20%	100	0.43	0.37
817CY-680M	68.0	±20%	100	0.50	0.35
817CY-820M	82.0	±20%	100	0.72	0.32
817CY-101M	100	±20%	100	0.78	0.30

TYPE D75P

Frequency Range: 0.1 ~ 1MHz
Inductance Range: 10 ~ 470µH
DC Current: 0.3A (at 330µH) 0.6A (at 100µH)
Temperature Coefficient: 1500PPM/°C max.



Unit: mm

Features

- Compact, low profile (7.6mm square, 5mm high)
- Magnetically shielded
- Suitable for reflow soldering, pot core construction
- Available on tape and reel for automatic insertion
- Ideal for portable DC-DC converter inductor applications.

STANDARD PARTS SELECTION GUIDE

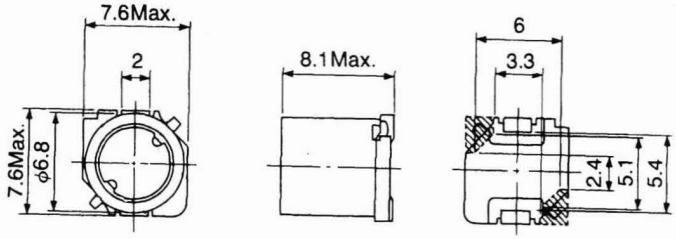
(1) Inductance is measured by LCR-meter 4284A (hp) or equivalent.
(2) DC Resistance is measured by Digital Multimeter TR6871 (Advantest) or equivalent.
(3) The rated DC current is that which the inductance value decreases 10% by the excitation DC current or which the temperature rises to 40°C by excitation DC current, whichever is lower. (in case of 20°)

TYPE D75P

TOKO Part Number	Inductance (1) L (µH)	Tolerance	Test Frequency KHz	DC Resistance (2) Ω (max.)	DC Current (3) (mA) max.
646QY-100N	10	±30%	100	0.065	840
646QY-120N	12	±30%	100	0.095	700
646QY-150N	15	±30%	100	0.110	650
646QY-180N	18	±30%	100	0.125	610
646QY-220N	22	±30%	100	0.160	510
646QY-270N	27	±30%	100	0.180	470
646QY-330N	33	±30%	100	0.210	450
646QY-390N	39	±30%	100	0.270	420
646QY-470N	47	±30%	100	0.365	370
646QY-560N	56	±30%	100	0.395	350
646QY-680N	68	±30%	100	0.455	320
646QY-820N	82	±30%	100	0.600	300
646QY-101N	100	±30%	100	0.685	260
646QY-121N	120	±30%	100	0.785	240
646QE-151N	150	±30%	100	1.140	210
646QE-181N	180	±30%	100	1.235	190
646QE-221N	220	±30%	100	1.960	170
646QE-271N	270	±30%	100	2.140	160
646QE-331N	330	±30%	100	2.400	150
646QE-391N	390	±30%	100	2.710	130
646QE-471N	470	±30%	100	3.600	120

TYPE D78C

Frequency Range: 0.1 ~ 1MHz
Inductance Range: 1 ~ 330µH
DC Current: 0.9A (at 100µH) 2.8A (at 10µH)
Temperature Coefficient: 1500PPM/°C max.



Unit: mm

Features

- 7.6mm square, 8.1mm high
- Magnetically shielded
- Suitable for large currents
- Suitable for reflow soldering
- Available on tape and reel for automatic insertion
- Ideal for a variety of DC-DC converter inductor applications

STANDARD PARTS SELECTION GUIDE

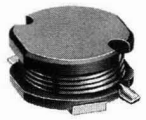
(1) Inductance is measured by LCR-meter 4284A (hp) or equivalent.
(2) DC Resistance is measured by Digital Multimeter TR6871 (Advantest) or equivalent.
(3) The rated DC current is that which the inductance value decreases 10% by the excitation DC current or which the temperature rises to 40°C by excitation DC current, whichever is lower. (in case of 20°)

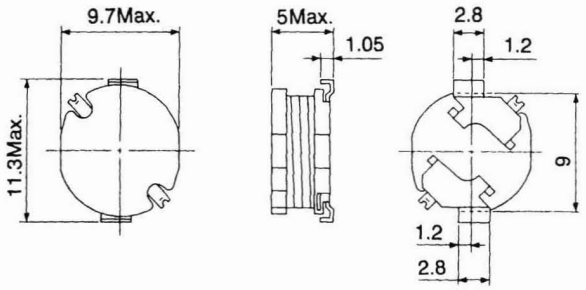
TYPE D78C

TOKO Part Number	Inductance (1) (µH)	L Tolerance	Test Frequency KHz	DC Resistance (2) Ω (max.)	Related DC Current (3) A (max.)
648CY-1R5M	1.5	±20%	100	0.023	4.00
648CY-2R2M	2.2	±20%	100	0.026	3.60
648CY-3R3M	3.3	±20%	100	0.031	3.10
648CY-4R7M	4.7	±20%	100	0.037	2.50
648CY-6R8M	6.8	±20%	100	0.044	2.10
648CY-100M	10.0	±20%	100	0.053	1.75
648CY-120M	12.0	±20%	100	0.056	1.70
648CY-150M	15.0	±20%	100	0.065	1.45
648CY-180M	18.0	±20%	100	0.071	1.32
648CY-220M	22.0	±20%	100	0.079	1.20
648CY-270M	27.0	±20%	100	0.082	1.08
648CY-330M	33.0	±20%	100	0.099	1.00
648CY-390M	39.0	±20%	100	0.134	0.90
648CY-470M	47.0	±20%	100	0.150	0.86
648CY-560M	56.0	±20%	100	0.201	0.83
648CY-680M	68.0	±20%	100	0.300	0.80
648CY-820M	82.0	±20%	100	0.320	0.70
648CY-101M	100.0	±20%	100	0.350	0.60
648CY-121M	120.0	±20%	100	0.581	0.53
648CY-151M	150.0	±20%	100	0.646	0.48
648CY-181M	180.0	±20%	100	0.725	0.45
648CY-221M	220.0	±20%	100	0.811	0.40
648CY-271M	270.0	±20%	100	1.148	0.36
648CY-331M	330.0	±20%	100	1.273	0.32

TYPE D10F

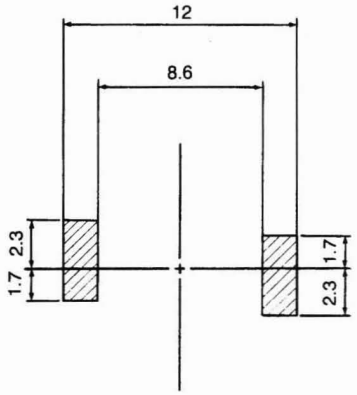
For Reflow Soldering
Frequency Range: 1KHz ~ 1MHz
Inductance Range: 10 ~ 1500µH





Features

- Low profile SMD Type (5mm high)
- Suitable for large current
- Suitable for reflow soldering
- Available on tape and reel for automatic insertion



Unit: mm

STANDARD PARTS SELECTION GUIDE

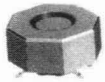
(1) Inductance is measured by LCR-meter 4284A (hp) or equivalent.
(2) DC Resistance is measured by Digital Multimeter TR6871 (Advantest) or equivalent.
(3) The rated DC current is that which the inductance value decreases 10% by the excitation DC current or which the temperature rises to 40°C by excitation DC current, whichever is lower. (in case of 20°)

TYPE D10F

TOKO Part Number	Inductance (2) L (µH)	Tolerance	Test Frequency KHz	DC Resistance (1) Ω (max.)	DC Current (3) (A) max.
A814AY-100M	10	±20%	100	0.047	2.60
A814AY-120M	12	±20%	100	0.050	2.48
A814AY-150M	15	±20%	100	0.058	2.27
A814AY-180M	18	±20%	100	0.067	2.15
A814AY-220M	22	±20%	100	0.075	2.00
A814AY-270M	27	±20%	100	0.087	1.84
A814AY-330M	33	±20%	100	0.095	1.72
A814AY-390M	39	±20%	100	0.12	1.58
A814AY-470K	47	±10%	100	0.15	1.44
A814AY-560K	56	±10%	100	0.18	1.28
A814AY-680K	68	±10%	100	0.20	1.20
A814AY820K	82	±10%	100	0.23	1.09
A814AY-101K	100	±10%	100	0.27	1.05
A814AY-121K	120	±10%	100	0.33	0.92
A814AY-151K	150	±10%	100	0.40	0.80
A814AY-181K	180	±10%	100	0.53	0.73
A814AY-221K	220	±10%	100	0.60	0.66
A814AY-271K	270	±10%	100	0.84	0.53
A814AY-331K	330	±10%	100	1.00	0.51
A814AY-381K	390	±10%	100	1.09	0.49
A814AY-471K	470	±10%	100	1.25	0.46
A814AY-561K	560	±10%	100	1.63	0.41
A814AY-681K	680	±10%	100	1.90	0.38
A814AY-821K	820	±10%	100	2.44	0.34
A814AY-102K	1000	±10%	100	2.80	0.31
A814AY-122K	1200	±10%	100	3.67	0.27
A814AY-152K	1500	±10%	100	4.37	0.25

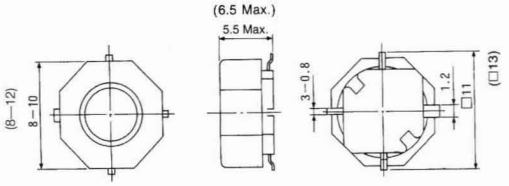
TYPE 10RF, 12RF

For Reflow Soldering
Frequency Range: 0.01~15MHz
Inductance Range: 10RF 10~220µH, 12RF 10-560µH
Temperature Coefficient: 10RF 1000ppm/°C
12RF 700ppm/°C



Features

- High current transformer, ideal for use as choke coil for DC/DC circuit.
- Available with secondary winding.
- Entire choke is magnetically shielded.
- Low profile package is ideal for height restrictive designs.



( ): 12RF
Unit: mm

STANDARD PARTS SELECTION GUIDE

(1) The rated DC current is that which the inductance value decreases 10% by the excitation DC current, measured at 1kHz by universal bridge or equivalent.
(2) Rated DC current is for reference only.

TYPE 10RF

TOKO Part Number	Inductance (µH)	Qu	Test Measuring Freq. Qu & Inductance	DC Resistance (ohm)	Rated DC(1), (2) Current (mA)
459A-1001	10±15%	20 min.	2.52MHz	0.077 max.	1200 max.
459A-1002	12±15%	20 min.	2.52MHz	0.085 max.	1070 max.
459A-1003	15±15%	20 min.	2.52MHz	0.094 max.	1000 max.
459A-1004	18±15%	20 min.	2.52MHz	0.110 max.	930 max.
459A-1005	22±15%	20 min.	2.52MHz	0.120 max.	800 max.
459A-1006	22±15%	20 min.	2.52MHz	0.130 max.	760 max.
459A-1007	33±15%	20 min.	2.52MHz	0.150 max.	650 max.
459A-1008	39±15%	20 min.	2.52MHz	0.160 max.	620 max.
459A-1009	47±15%	20 min.	2.52MHz	0.180 max.	570 max.
459A-1010	56±15%	20 min.	2.52MHz	0.200 max.	520 max.
459A-1011	68±15%	20 min.	2.52MHz	0.230 max.	470 max.
459A-1012	82±15%	20 min.	2.52MHz	0.250 max.	430 max.
459A-1013	100±15%	25 min.	796kHz	0.300 max.	360 max.
459A-1014	120±15%	25 min.	796kHz	0.340 max.	340 max.
459A-1015	150±15%	20 min.	796kHz	0.380 max.	308 max.
459A-1016	180±15%	20 min.	796kHz	0.450 max.	279 max.
459A-1017	220±15%	20 min.	796kHz	0.520 max.	240 max.

TYPE 12RF

TOKO Part Number	Inductance (µH)	Qu	Test Measuring Freq. Qu & Inductance	DC Resistance (ohm)	Rated DC(1), (2) Current (mA)
457A-1001	10±15%	25 min.	2.52MHz	0.11 max.	2200 max.
457A-1002	12±15%	25 min.	2.52MHz	0.12 max.	1860 max.
457A-1003	15±15%	25 min.	2.52MHz	0.13 max.	1740 max.
457A-1004	18±15%	25 min.	2.52MHz	0.14 max.	1598 max.
457A-1005	22±15%	25 min.	2.52MHz	0.16 max.	1479 max.
457A-1006	22±15%	25 min.	2.52MHz	0.18 max.	1357 max.
457A-1007	33±15%	25 min.	2.52MHz	0.19 max.	1259 max.
457A-1008	39±15%	20 min.	2.52MHz	0.23 max.	1089 max.
457A-1009	47±15%	20 min.	2.52MHz	0.24 max.	1020 max.
457A-1010	56±15%	20 min.	2.52MHz	0.26 max.	940 max.
457A-1011	68±15%	20 min.	2.52MHz	0.28 max.	880 max.
457A-1012	82±15%	20 min.	2.52MHz	0.30 max.	830 max.
457A-1013	100±15%	30 min.	796kHz	0.36 max.	680 max.
457A-1014	120±15%	30 min.	796kHz	0.40 max.	640 max.
457A-1015	150±15%	30 min.	796kHz	0.45 max.	580 max.
457A-1016	180±15%	30 min.	796kHz	0.50 max.	500 max.
457A-1017	220±15%	30 min.	796kHz	0.54 max.	480 max.
457A-1018	270±15%	30 min.	796kHz	0.62 max.	420 max.
457A-1019	330±15%	25 min.	796kHz	0.67 max.	397 max.
457A-1020	390±15%	20 min.	796kHz	0.75 max.	360 max.
457A-1021	470±15%	20 min.	796kHz	0.85 max.	310 max.
457A-1022	560±15%	20 min.	796kHz	1.00 max.	280 max.

TOKO Variable Coils

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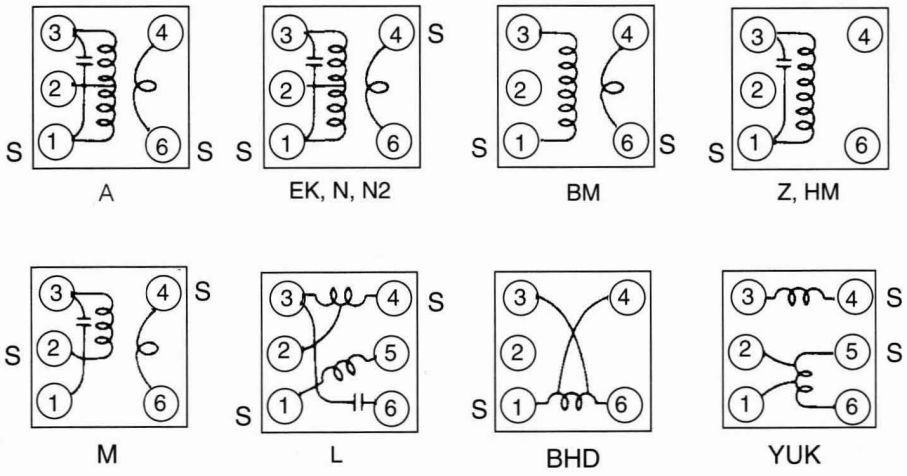
Standard Connections:



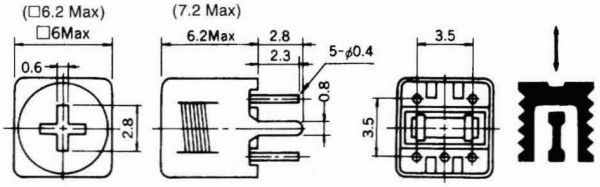
5mm TYPE 5P, 5PA

Frequency Range: 5P 0.2~2.0MHz, 5PA 0.1-1MHz
5P High Frequency 1-15MHz

Inductance Range: 5P 30µH-1mH, 5PA 0.8–4.2mH
5P High Frequency 1-40µH

Temperature Coefficient: TC (L) of 5P 850±350ppm/°C
5PA 750±450ppm/°C and
5P High Frequency 220±220ppm/°C.
With Internal Capacitor TC (F) of 5P or 5P High Frequency 0±250ppm/°C

Optional Internal Capacitance Value:[1] [2]
(See selection guide)



( ): 5PA
Unit: mm

Features

- Low profile for compact designs.

STANDARD COILS SELECTION GUIDE

(1) The 5P is available with the following internal ceramic capacitors: 180, 470, 1500pF for standard AM applications.
(2) 5P High Frequency is available with internal ceramic capacitors, 18-47pF for standard FM applications.

TYPE 5P

TOKO Part Number	Inductance Range (µH)	Q (min.)	Test Frequency (MHz)
5PNR-T1005Z	33.0±5%	40	2.52
5PNR-T1006Z	39.0±5%	40	2.52
5PNR-T1007Z	47.0±5%	40	2.52
5PNR-T1008Z	56.0±5%	40	2.52
5PNR-T1009Z	68.0±5%	40	2.52
5PNR-T1010Z	82.0±5%	40	2.52
5PNR-T1011Z	100.0±5%	40	0.796
5PNR-T1012Z	120.0±5%	40	0.796
5PNR-T1013Z	150.0±5%	40	0.796
5PNR-T1014Z	180.0±5%	40	0.796
5PNR-T1015Z	220.0±5%	40	0.796
5PNR-T1016Z	270.0±5%	40	0.796
5PNR-T1017Z	330.0±5%	40	0.796
5PNR-T1018Z	390.0±5%	40	0.796
5PNR-T1019Z	470.0±5%	40	0.796
5PNR-T1020Z	560.0±5%	40	0.796
5PNR-T1021Z	680.0±5%	40	0.796

TYPE 5P High Frequency

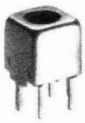
TOKO Part Number	Inductance Range (µH)	Q (min.)	Test Frequency (MHz)
332PN-T1012Z	1.0±5%	55	7.96
332PN-T1013Z	1.2±5%	55	7.96
332PN-T1014Z	1.5±5%	55	7.96
332PN-T1015Z	1.8±5%	55	7.96
332PN-T1016Z	2.2±5%	55	7.96
332PN-T1017Z	2.7±5%	55	7.96
332PN-T1018Z	3.3±5%	55	7.96
332PN-T1019Z	3.9±5%	55	7.96
332PN-T1020Z	4.7±5%	55	7.96
332PN-T1021Z	5.6±5%	55	7.96
332PN-T1022Z	6.8±5%	55	7.96
332PN-T1023Z	8.2±5%	55	7.96
332PN-T1024Z	10.0±5%	55	2.52
332PN-T1025Z	12.0±5%	55	2.52
332PN-T1026Z	15.0±5%	55	2.52
332PN-T1027Z	18.0±5%	55	2.52
332PN-T1028Z	22.0±5%	55	2.52
332PN-T1029Z	27.0±5%	55	2.52

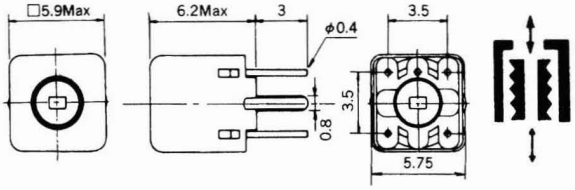
TYPE 5PA

TOKO Part Number	Inductance Range (mH)	Q (min.)	Test Frequency (kHz)
451AN-0002Z	0.8±5%	65	796
451AN-0001Z	1.0±5%	50	252
451AN-0042Z	2.0±5%	40	252
451AN-0041Z	3.0±5%	50	252

5mm TYPE 5K

Frequency Range: 30-150MHz
Inductance Range: 0.08-1.0μH
Temperature Coefficient: 220±150ppm/°C





Unit: mm

Features

- The dual, closely spaced slots on the bobbin produces high Q, tight tolerances, stable winding impedance, low distributed capacitance, and added stability in humid conditions.

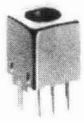
STANDARD COILS SELECTION GUIDE

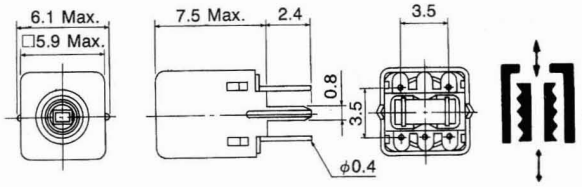
TYPE 5K

TOKO Part Number	Inductance Range (μH)	Q (min.)	Test Frequency (MHz)
294SN-T1008Z	0.08±2%	45	75.0
294SN-T1009Z	0.10±6%	45	75.0
294SN-T1010Z	0.15±6%	45	75.0
294SN-T1011Z	0.22±6%	45	45.0
294SN-T1012Z	0.33±6%	45	45.0
294SN-T1013Z	0.47±6%	45	45.0
294SN-T1014Z	0.68±6%	45	45.0
294SN-T1015Z	1.00±6%	45	30.0

5mm TYPE 5KM

Frequency Range: 30-150MHz
Inductance Range: 0.05-10μH
Temperature Coefficient: TC (L) 80±120ppm/°C
TC (F) 0±120ppm/°C
Internal Capacitance Value: 5-56pF





Unit: mm

Features

- Available with internal capacitor.
- Spiral wound with high number of closely spaced slots on form, to yield low distributed capacitance, low temperature coefficient, and added stability in humid conditions.

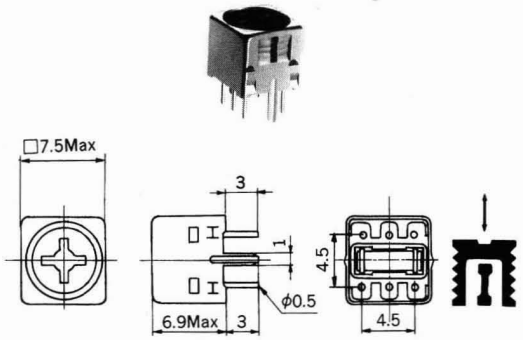
STANDARD COILS SELECTION GUIDE

TYPE 5KM

TOKO Part Number	Inductance Range (μH)	Q (min.)	Test Frequency (MHz)
369SNS-1646Z	0.10±5%	35	50
369SNS-1647Z	0.12±5%	35	50
369SNS-1648Z	0.15±5%	35	50
369SNS-1649Z	0.18±6%	35	50
369SNS-1650Z	0.22±6%	35	50
369SNS-1651Z	0.27±6%	35	50
369SNS-1652Z	0.33±6%	35	50
369SNS-1653Z	0.39±6%	35	50
369SNS-1654Z	0.47±6%	35	50
369SNS-1655Z	0.56±6%	35	50
369SNS-1656Z	0.68±6%	35	50
369SNS-1657Z	0.82±6%	35	50
369SNS-1658Z	1.00±6%	25	7.96
369SNS-1659Z	1.20±6%	25	7.96
369SNS-1660Z	1.50±6%	25	7.96
369SNS-1661Z	1.80±5%	25	7.96
369SNS-1662Z	2.20±5%	25	7.96
369SNS-1663Z	2.70±5%	25	7.96
369SNS-1664Z	3.30±6%	25	7.96
369SNS-1665Z	3.90±6%	25	7.96
369SNS-1666Z	4.70±6%	25	7.96
369SNS-1667Z	5.60±5%	25	7.96
369SNS-1668Z	6.80±5%	25	7.96
369SNS-1676Z	8.20±5%	25	7.96
369SNS-1677Z	10.00±3%	25	7.96

7mm TYPE 7PS

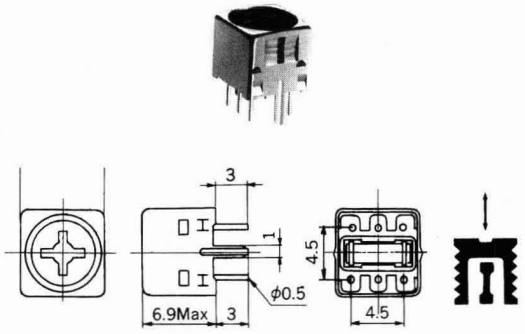
Frequency Range: 20kHz-1.5MHz
Inductance Range: 10-700µH
Temperature Coefficient: Inductor TC (L) 270±150ppm/°C
With Internal Capacitor TC (F) 0±250ppm/°C
Optional Internal Capacitance Value: 150-390pF



Unit: mm

7mm TYPE 7PS High Frequency

Frequency Range: 2-15MHz
Inductance Range: 1-35µH
Temperature Coefficient: Inductor TC (L) 330±220ppm/°C
With Internal Capacitor TC (F) 0±250ppm/°C
Optional Internal Capacitance Value: 5-100pF



Unit: mm

Features

- Low profile, for a 7mm coil of only 6.9mm
- High stability
- Types 7PS for AM circuit applications, and 7PS (high frequency) for FM circuit applications, are ideal for use as IFT coils and in OSC circuits.

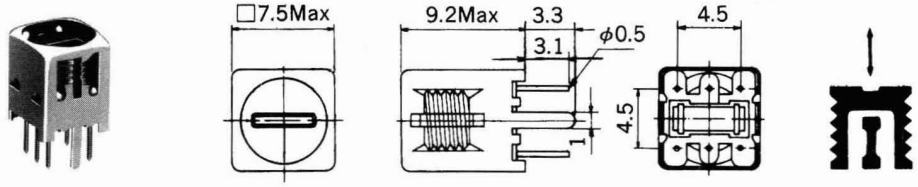
STANDARD PARTS SELECTION GUIDE

TYPE 7PS

TOKO Part Number	Inductance Range (µH)	Q (min.)	Test Frequency	Note
392AN-1815Z=S	1.0±6%	85	7.96MHz	High Frequency
392AN-1816Z=S	2.2±6%	106	7.96MHz	High Frequency
392AN-1817Z=S	3.3±6%	107	7.96MHz	High Frequency
392AN-1818Z=S	4.7±6%	110	7.96MHz	High Frequency
392AN-1819Z=S	5.6±6%	110	7.96MHz	High Frequency
392AN-1820Z=S	6.8±6%	112	7.96MHz	High Frequency
392AN-1821Z=S	8.2±6%	100	7.96MHz	High Frequency
392AN-1822Z=S	10.0±6%	91	7.96MHz	High Frequency
7PSLN-1823Z=S	22.0±6%	46	2.52MHz	
7PSLN-1824Z=S	33.0±6%	47	2.52MHz	
7PSLN-1825Z=S	47.0±6%	47	2.52MHz	
7PSLN-1826Z=S	56.0±6%	47	2.52MHz	
7PSLN-1827Z=S	68.0±6%	44	2.52MHz	
7PSLN-1828Z=S	82.0±6%	46	2.52MHz	
7PSLN-1829Z=S	100.0±6%	87	796kHz	
7PSLN-1830Z=S	220.0±6%	89	796kHz	
7PSLN-1831Z=S	330.0±6%	91	796kHz	
7PSLN-1832Z=S	470.0±6%	88	796kHz	
7PSLN-1833Z=S	560.0±6%	83	796kHz	
7PSLN-1834Z=S	680.0±6%	73	796kHz	

7mm TYPE 7PL

Frequency Range: 200kHz-2MHz
2-20MHz (High Frequency)
Inductance Range: 20–500µH
1-100µH (High Frequency)
Temperature Coefficient: Inductor TC (L) 750±500ppm/°C
TC (L) 220±220ppm/°C (High Frequency)
With Internal Capacitor TC (F) 0±250ppm/°C
Optional Internal Capacitance Value: 150-390pF
5~100pF (High Frequency)



Unit: mm

Features

- Low profile, for a 7mm coil of only 9.2mm.
- Types 7PS for AM circuit application, and 7PS (high frequency) for FM circuit applications, are ideal for use as IFT coils and in OSC circuits.

STANDARD COILS SELECTION GUIDE

TYPE 7PL

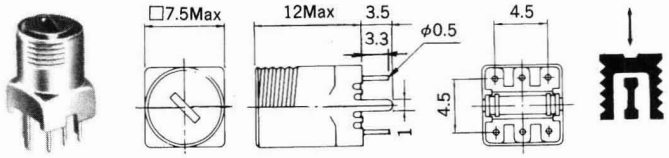
TOKO Part Number	Inductance Range (µH)	Q (min.)	Test Frequency
L7BRS-1764Z	56±5%	40	2.52MHz
L7BRS-1765Z	100±5%	73	796kHz
L7BRS-1766Z	150±5%	81	796kHz
L7BRS-1767Z	220±5%	80	796kHz
L7BRS-1768Z	270±5%	82	796kHz
L7BRS-1769Z	330±5%	82	796kHz
L7BRS-1770Z	390±5%	78	796kHz

TYPE 7PL High Frequency

TOKO Part Number	Inductance Range (µH)	Q (min.)	Test Frequency
218ANS-1083Z	2.0±4%	72	7.96MHz
218ANS-1084Z	3.3±4%	69	7.96MHz
218ANS-1085Z	4.7±4%	70	7.96MHz
218ANS-1086Z	6.8±4%	73	7.96MHz
218ANS-1087Z	10.0±4%	69	2.52MHz
218ANS-1088Z	15.0±4%	70	2.52MHz
218ANS-1089Z	18.0±4%	70	2.52MHz

7mm TYPE 7P

Frequency Range: 200kHz-2MHz
Inductance Range: 10µH–2.6mH
Temperature Coefficient: Inductor TC (L) 750±500ppm/°C
With Internal Capacitor TC (F) 0±250ppm/°C
Internal Capacitance Value: 150-390pF(1)



(Unit: mm)

Features

- Ideal for use as an AM IFT and in oscillator circuits.
- Unique design features a cup core adjustor, threaded directly into the shield can, allowing the use of larger cores. This produces the superior, large signal characteristics typically associated with 10mm types.

STANDARD COILS SELECTION GUIDE

(1) Cross slit core (Philips type) also available upon request.

TYPE 7P

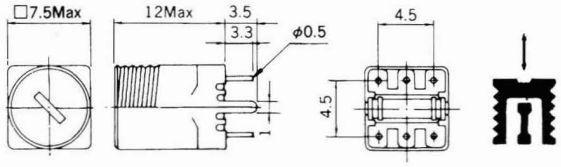
TOKO Part Number	Inductance Range (µH)	Turns Ratio 1-3/1-2	Turns Ratio 1-3/4-6	Q (min.)	Test Frequency (MHz)
7BR-151208N0	150±8%	65:2	65:8	60	1.4
7BR-271208N0	270±8%	43:1	43:4	60	1.4
7BR-271308N0	270±8%	86:3	43:4	60	1.4
7BR-331208N0	330±8%	95:2	95:8	60	1.4
7BR-331308N0	330±8%	95:3	95:8	60	1.4
7BR-361208N0	360±8%	50:1	25:2	60	1.4
7BR-361308N0	360±8%	100:3	25:2	60	1.4
A7BRS-T1040Z	100±10%			80	0.796
A7BRS-T1041Z	120±10%			80	0.796
A7BRS-T1042Z	150±10%			80	0.796
A7BRS-T1043Z	180±10%			80	0.796
A7BRS-T1044Z	220±10%			80	0.796
A7BRS-T1045Z	270±10%			80	0.796
A7BRS-T1046Z	330±10%			80	0.796

TYPE 7P with Internal Capacitor

TOKO Part Number	Tuning Capacitance (pf)	Turns Ratio 1-3/2-3	Turns Ratio 1-3/4-6	Q (min.)	Test Frequency (kHz)
7LC-252142N0	180+5(ext)	146:37	146:20	70	455
7LC-252203N0	180+5(ext)	146:37	146:3	70	455
7LC-352142N0	180+5(ext)	146:52	146:20	70	455
7LC-352203N0	180+5(ext)	146:52	146:3	70	455
7LC-352353N0	180+5(ext)	146:52	146:5	70	455
7LC-352503N0	180+5(ext)	146:52	146:7	70	455
7LC-352713N0	180+5(ext)	146:52	146:10	70	455
7LC-452503N0	180+5(ext)	146:66	146:7	70	455
7MC-162503N0	180+5(ext)	146:23	146:7	110	455
7MC-202503N0	180+5(ext)	146:29	146:7	110	455
7MC-222162N0	180+5(ext)	146:33	146:23	110	455
7MC-312162N0	180+5(ext)	146:46	146:23	110	455
7MC-402353N0	180+5(ext)	146:58	146:5	110	455
7MC-402503N0	180+5(ext)	146:58	146:7	110	455
7MC-402563N0	180+5(ext)	146:58	146:8	110	455
7MC-452252N0	180+5(ext)	146:66	146:37	110	455
7MC-502503N0	180+5(ext)	146:73	146:7	110	455

7mm TYPE 7P High Frequency
7mm TYPE 7P High Frequency with Internal Capacitor(1)

Frequency Range: 2–20MHz
Inductance Range: 1–82µH
Temperature Coefficient of : Inductor TC (L) 220±220ppm/°C
With Internal Capacitor TC (F) 0±250ppm/°C
Internal Capacitance Values: 5-100pF(1)



Unit: mm

Features

- Ideal for use as an FM IFT and in detector circuits.
- Unique design features a cup core adjustor, threaded directly into the shield can, allowing the use of larger cores. This produces the superior, large signal characteristics typically associated with 10mm types.

STANDARD COILS SELECTION GUIDE

(1) Cross slit core (Philips type) also available upon request.

TYPE 7P High Frequency

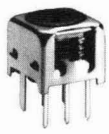
TOKO Part Number	Inductance Range (µH)	Q (min.)	Test Frequency (MHz)
A119ANS-T1029Z	4.7±10%	80	7.96
A119ANS-T1030Z	5.6±10%	80	7.96
A119ANS-T1031Z	6.8±10%	80	7.96
A119ANS-T1032Z	8.2±10%	80	7.96
A119ANS-T1033Z	10.0±10%	80	2.52
A119ANS-T1034Z	12.0±10%	80	2.52
A119ANS-T1035Z	15.0±10%	80	2.52
A119ANS-T1036Z	18.0±10%	80	2.52
A119ANS-T1037Z	22.0±10%	80	2.52
A119ANS-T1038Z	27.0±10%	80	2.52
A119ANS-T1039Z	33.0±10%	80	2.52
A119ANS-T1040Z	39.0±10%	80	2.52
A119ANS-T1041Z	47.0±10%	80	2.52
A119ANS-T1042Z	56.0±10%	80	2.52
A119ANS-T1043Z	68.0±10%	80	2.52
A119ANS-T1044Z	82.0±10%	80	2.52

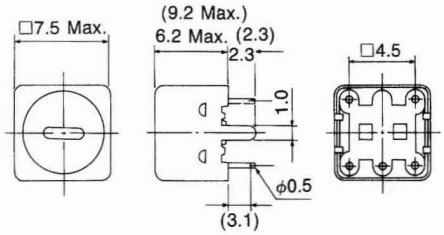
TYPE 7P High Frequency with Internal Capacitor

TOKO Part Number	Turns Ratio: 1-3/2-3	1-3/4-6	Others	Tuning Capacitance (pF)	Q	Test Frequency (MHz)
119AC-470033N0	14:3	14:3		47+5(ext)	100±20%	10.7
119AC-470052N0	14:5	14:2		47+5(ext)	110±20%	10.7
119AC-470072N0	14:7	14:2		47+5(ext)	110±20%	10.7
119AC-470073N0	14:7	14:3		47+5(ext)	110±20%	10.7
119AC-470084L0				47+3(ext)	90±20%	10.7
119AC-470112N0	14:11	14:2		47+5(ext)	120±20%	10.7
119AC-750111M0			2-3/4-6 11:1	75+5(ext)	100±20%	10.7
119AC-750112M0			2-3/4-6 11:2	75+5(ext)	100±20%	10.7
119FC-560061N0	12:6	12:1		56+0(ext)	120±20%	10.7
119FC-820051N0	10:5	10:1		82+0(ext)	110±20%	10.7
119LC-470033N0	14:3	14:3		47+5(ext)	65±20%	10.7
119LC-470053N0	14:5	14:3		47+5(ext)	70±20%	10.7
119LC-470073N0	14:7	14:3		47+5(ext)	70±20%	10.7

7mm TYPE 7TS, 7TL

Frequency Range: 10-200kHz (10-200kHz)
Inductance Range: 0.1-7mH (0.2-15.0mH)
Temperature Coefficient: TC (L) 220±220ppm/°C max. (150±150ppm/°C)





( ): for 7TL (Unit: mm)

Features

- The higher inductance makes the 7TS/7TL suitable for low frequency and large inductance applications.
- 7TS is low profile version of only 6.2mm.

STANDARD COILS SELECTION GUIDE

TYPE 7TS

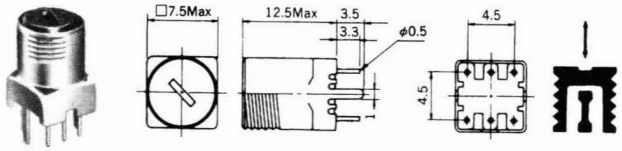
TOKO Part Number	Inductance Range (mH)	Q (min.)	Test Frequency (KHz)
247BR-0028Z	0.10±4%	80	796.0
247BR-0029Z	0.15±4%	80	796.0
247BR-0030Z	0.22±4%	80	796.0
247BR-0031Z	0.33±4%	80	796.0
247BR-0032Z	0.47±4%	80	796.0
247BR-0033Z	0.68±4%	80	796.0
247MN-0335Z	1.00±4%	60	252.0
247MN-0537Z	1.50±4%	80	252.0
247MN-0628Z	2.20±5%	70	252.0
247MN-0170Z	3.30±5%	60	252.0
247MN-0534Z	4.70±6%	50	252.0
247MN-0411Z	6.80±5%	65	252.0

TYPE 7TL

TOKO Part Number	Inductance Range (mH)	Q (min.)	Test Frequency (KHz)
269LN-0031Z	0.22±5%	60	796.0
269LN-0089Z	0.47±5%	60	796.0
269LN-0091Z	0.82±5%	60	796.0
269LN-0330Z	1.00±6%	80	252.0
269LN-0332Z	1.20±6%	80	252.0
269LN-0093Z	1.80±5%	70	252.0
269LN-0094Z	2.70±5%	70	252.0
269LN-0095Z	3.90±5%	70	252.0
269LN-0096Z	5.60±5%	70	252.0
269LN-0499Z	8.20±5%	70	252.0
269LN-0355Z	10.0±6%	60	79.6
269LN-0093Z	12.4±4%	55	79.6
269LN-0099Z	15.0±4%	50	79.6

7mm TYPE 7PA

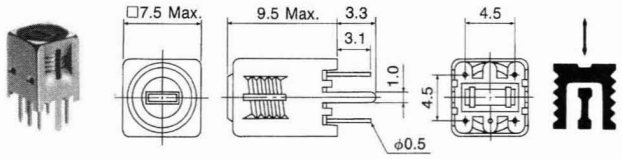
Frequency Range: 10–200kHz
Inductance Range: 1-22mH
Temperature Coefficient: TC(L) 250ppm/°C max
Internal Capacitance Values: 10~6800pF



(Unit: mm)

7mm TYPE 7PLA

Frequency Range: 10–200kHz
Inductance Range: 1-15mH
Temperature Coefficient: TC (L) 750±250ppm/°C
Internal Capacitance Values: 10-6800pF



(Unit: mm)

Features

- Designed for low frequencies and for use in RF applications, where a high saturation level becomes useful in achieving an extended dynamic range.

STANDARD COILS SELECTION GUIDE

TYPE 7PA

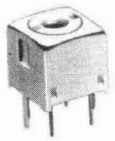
TOKO Part Number	Inductance Range (mH)	Q (min.)	Test Frequency (KHz)
126ANS-T1094Z	1.0±6%	60	252.0
126ANS-T1095Z	1.2±6%	60	252.0
126ANS-T1096Z	1.5±6%	60	252.0
126ANS-T1097Z	1.8±6%	60	252.0
126ANS-T1098Z	2.2±6%	60	252.0
126ANS-T1099Z	2.7±6%	60	252.0
126ANS-T1100Z	3.3±6%	60	252.0
126ANS-T1101Z	3.9±6%	60	252.0
126ANS-T1102Z	4.7±6%	60	252.0
126ANS-T1103Z	5.6±6%	60	252.0
126ANS-T1104Z	6.8±6%	60	252.0
126ANS-T1105Z	8.2±6%	60	252.0
126ANS-T1106Z	10.0±6%	60	79.6
126ANS-T1107Z	12.0±6%	60	79.6
126ANS-T1108Z	15.0±6%	60	79.6
126ANS-T1109Z	18.0±6%	60	79.6
126ANS-T1110Z	22.0±6%	60	79.6

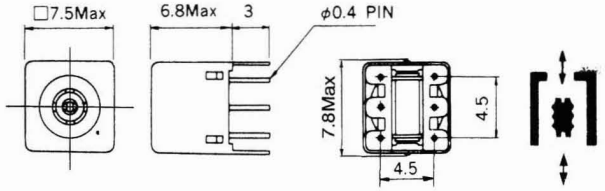
TYPE 7PLA

TOKO Part Number	Inductance Range (mH)	Q (min.)	Test Frequency (KHz)
284XNS-1111Z	2.7±6%	80	252.0
284XNS-1158Z	3.3±6%	70	252.0
284XNS-1356Z	3.9±4%	70	252.0
284XNS-1357Z	4.7±3%	80	252.0
284XNS-1015Z	6.8±6%	70	252.0
284XNS-1132Z	8.2±5%	70	252.0
284XNS-1394Z	10.0±5%	50	252.0
284XNS-1016Z	12.0±6%	50	79.6
284XNS-1017Z	15.0±6%	50	79.6

7mm TYPE 7KLS

Frequency Range: 2–150MHz
Inductance Range: 0.03-12µH
Operating Temperature Range: –25°C-80°C
Temperature Coefficient: TC (F) 40±600ppm/° (Reference only)
Optional Internal Capacitance Values: 5-1000pF





(Unit: mm)

Features

- Designed for Quadrature Detector coil in FM IF circuit.
- Prepared additional winding area on the coil bobbin for phase shifter inductor.

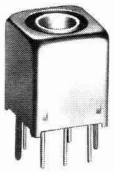
STANDARD COILS SELECTION GUIDE

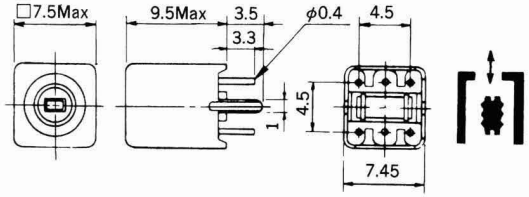
TYPE 7KLS

TOKO Part Number	Inductance Range (µH)	Q (min.)	Test Frequency (MHz)
402ENS-1168Z	1.0±2%	15	7.96
402ENS-1169Z	1.2±2%	15	7.96
402ENS-1170Z	1.5±2%	15	7.96
402ENS-1171Z	1.8±2%	15	7.96
402ENS-1172Z	2.2±2%	15	7.96
402ENS-1173Z	2.7±2%	15	7.96
402ENS-1174Z	3.3±2%	15	7.96
402ENS-1175Z	3.9±2%	15	7.96
402ENS-1176Z	4.7±2%	15	7.96
402ENS-1177Z	5.6±2%	15	7.96
402ENS-1178Z	6.8±2%	15	7.96
402ENS-1179Z	8.2±2%	15	7.96
402ENS-1180Z	10.0±2%	15	2.52
402ENS-1181Z	12.0±2%	15	2.52

7mm TYPE 7KLL

Frequency Range: 2-120MHz
Inductance Range: 0.03-47μH
Temperature Coefficient: Inductor TC (L) 220+220ppm/°C
With Internal Capacitor TC (F) 0±250ppm/°C
Internal Capacitance Values: 5-100pF





(Unit: mm)

Features

- Type 7KL is a low profile version of 7KM.
- Spiral wound with high number of closely spaced slots on form yields low distributed capacitance, low temperature coefficient, and added stability in humid conditions.

STANDARD COILS SELECTION GUIDE

TYPE 7KLL Frequency Range: 2 ~ 30MHz

TOKO Part Number	Inductance (μH)	Q min.	Test Frequency (MHz)
600BNS-8001 Z	0.10 ± 6%	40 min	50
600BNS-8002 Z	0.12 ± 6%	40 min	50
600BNS-8003 Z	0.15 ± 6%	45 min	50
600BNS-8004 Z	0.18 ± 6%	45 min	50
600BNS-8005 Z	0.22 ± 6%	50 min	50
600BNS-8006 Z	0.27 ± 6%	50 min	50
600BNS-8007 Z	0.33 ± 6%	55 min	50
600BNS-8008 Z	0.39 ± 6%	55 min	50
600BNS-8009 Z	0.47 ± 6%	55 min	50
600BNS-8010 Z	0.56 ± 6%	55 min	50
600BNS-8011 Z	0.68 ± 6%	55 min	50
600BNS-8012 Z	0.82 ± 6%	55 min	50
600BNS-8013 Z	1.0 ± 6%	49 ± 20%	7.96
600BNS-8014 Z	1.2 ± 6%	50 ± 20%	7.96
600BNS-8015 Z	1.5 ± 6%	47 ± 20%	7.96
600BNS-8016 Z	1.8 ± 6%	49 ± 20%	7.96
600BNS-8017 Z	2.2 ± 6%	46 ± 20%	7.96
600BNS-8018 Z	2.7 ± 6%	48 ± 20%	7.96
600BNS-8019 Z	3.3 ± 6%	48 ± 20%	7.96
600BNS-8020 Z	3.9 ± 6%	47 ± 20%	7.96
600BNS-8021 Z	4.7 ± 6%	47 ± 20%	7.96
600BNS-8022 Z	5.6 ± 6%	46 ± 20%	7.96
600BNS-8023 Z	6.8 ± 6%	45 ± 20%	7.96
600BNS-8024 Z	8.2 ± 6%	45 ± 20%	7.96
600BNS-8025 Z	10.0 ± 6%	40 ± 20%	2.52
600BNS-8026 Z	12.0 ± 6%	42 ± 20%	2.52
600BNS-8027 Z	15.0 ± 6%	43 ± 20%	2.52
600BNS-8028 Z	18.0 ± 6%	45 ± 20%	2.52
600BNS-8029 Z	22.0 ± 6%	46 ± 20%	2.52
F600BNS-8030 Z	27.0 ± 6%	33 ± 20%	2.52
F600BNS-8031 Z	33.0 ± 6%	32 ± 20%	2.52
F600BNS-8032 Z	39.0 ± 6%	37 ± 20%	2.52
F600BNS-8033 Z	47.0 ± 6%	36 ± 20%	2.52

STANDARD COILS SELECTION GUIDE

TYPE 7KLL Frequency Range: 30 ~ 80MHz

TOKO Part Number	Inductance (μH)	Q min.	Test Frequency (MHz)
600GNS-8034 Z	0.10 ± 6%	60 ± 20%	50
600GNS-8035 Z	0.12 ± 6%	65 ± 20%	50
600GNS-8036 Z	0.15 ± 6%	62 ± 20%	50
600GNS-8037 Z	0.18 ± 6%	68 ± 20%	50
600GNS-8038 Z	0.22 ± 6%	71 ± 20%	50
600GNS-8039 Z	0.27 ± 6%	77 ± 20%	50
600GNS-8040 Z	0.33 ± 6%	85 ± 20%	50
600GNS-8041 Z	0.39 ± 6%	84 ± 20%	50
600GNS-8042 Z	0.47 ± 6%	92 ± 20%	50
600GNS-8043 Z	0.56 ± 6%	88 ± 20%	50
600GNS-8044 Z	0.68 ± 6%	88 ± 20%	50
600GNS-8045 Z	0.82 ± 6%	87 ± 20%	50
600GNS-8046 Z	1.0 ± 6%	43 ± 20%	7.96
600GNS-8047 Z	1.2 ± 6%	42 ± 20%	7.96
600GNS-8048 Z	1.5 ± 6%	46 ± 20%	7.96
600GNS-8049 Z	1.8 ± 6%	45 ± 20%	7.96
600GNS-8050 Z	2.2 ± 6%	47 ± 20%	7.96
600GNS-8051 Z	2.7 ± 6%	45 ± 20%	7.96
600GNS-8052 Z	3.3 ± 6%	47 ± 20%	7.96
600GNS-8053 Z	3.9 ± 6%	47 ± 20%	7.96
600GNS-8054 Z	4.7 ± 6%	50 ± 20%	7.96
600GNS-8055 Z	5.6 ± 6%	48 ± 20%	7.96
600GNS-8056 Z	6.8 ± 6%	47 ± 20%	7.96
600GNS-8057 Z	8.2 ± 6%	47 ± 20%	7.96
600GNS-8058 Z	10.0 ± 6%	41 ± 20%	2.52
600GNS-8059 Z	12.0 ± 6%	42 ± 20%	2.52
600GNS-8060 Z	15.0 ± 6%	44 ± 20%	2.52
600GNS-8061 Z	18.0 ± 6%	45 ± 20%	2.52
600GNS-8062 Z	22.0 ± 6%	45 ± 20%	2.52
F600GNS-8063 Z	27.0 ± 6%	41 ± 20%	2.52
F600GNS-8064 Z	33.0 ± 6%	38 ± 20%	2.52
F600GNS-8065 Z	39.0 ± 6%	41 ± 20%	2.52
F600GNS-8066 Z	47.0 ± 6%	41 ± 20%	2.52

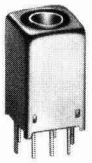
STANDARD COILS SELECTION GUIDE

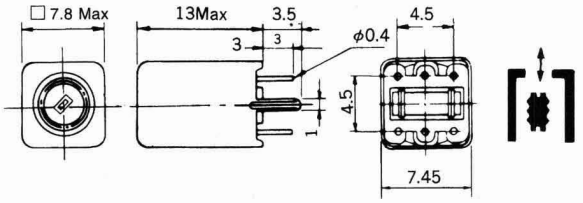
TYPE 7KLL Frequency Range: 80 ~ 120MHz

TOKO Part Number	Inductance (μH)	Q min.	Test Frequency (MHz)
600ENS-8067 Z	0.10 ± 6%	56 ± 20%	50
600ENS-8068 Z	0.12 ± 6%	64 ± 20%	50
600ENS-8069 Z	0.15 ± 6%	67 ± 20%	50
600ENS-8070 Z	0.18 ± 6%	73 ± 20%	50
600ENS-8071 Z	0.22 ± 6%	73 ± 20%	50
600ENS-8072 Z	0.27 ± 6%	81 ± 20%	50
600ENS-8073 Z	0.33 ± 6%	87 ± 20%	50
600ENS-8074 Z	0.39 ± 6%	88 ± 20%	50
600ENS-8075 Z	0.47 ± 6%	90 ± 20%	50
600ENS-8076 Z	0.56 ± 6%	93 ± 20%	50
600ENS-8077 Z	0.68 ± 6%	92 ± 20%	50
600ENS-8078 Z	0.82 ± 6%	94 ± 20%	50
600ENS-8079 Z	1.0 ± 6%	39 ± 20%	7.96
600ENS-8080 Z	1.2 ± 6%	45 ± 20%	7.96
600ENS-8081 Z	1.5 ± 6%	45 ± 20%	7.96
600ENS-8082 Z	1.8 ± 6%	45 ± 20%	7.96
600ENS-8083 Z	2.2 ± 6%	45 ± 20%	7.96
600ENS-8084 Z	2.7 ± 6%	45 ± 20%	7.96
600ENS-8085 Z	3.3 ± 6%	44 ± 20%	7.96
600ENS-8086 Z	3.9 ± 6%	44 ± 20%	7.96
600ENS-8087 Z	4.7 ± 6%	45 ± 20%	7.96
600ENS-8088 Z	5.6 ± 6%	45 ± 20%	7.96
600ENS-8089 Z	6.8 ± 6%	44 ± 20%	7.96
600ENS-8090 Z	8.2 ± 6%	47 ± 20%	7.96
600ENS-8091 Z	10.0 ± 6%	38 ± 20%	2.52
600ENS-8092 Z	12.0 ± 6%	40 ± 20%	2.52
600ENS-8093 Z	15.0 ± 6%	44 ± 20%	2.52
600ENS-8094 Z	18.0 ± 6%	35 ± 20%	2.52
600ENS-8095 Z	22.0 ± 6%	34 ± 20%	2.52
F600ENS-8096 Z	27.0 ± 6%	33 ± 20%	2.52
F600ENS-8097 Z	33.0 ± 6%	37 ± 20%	2.52
F600ENS-8098 Z	39.0 ± 6%	37 ± 20%	2.52
F600ENS-8099 Z	47.0 ± 6%	36 ± 20%	2.52

7mm TYPE 7KMM

Frequency Range: 2-120MHz
Inductance Range: 0.03-82μH
Temperature Coefficient: Of Inductor TC (L) 220±220ppm/°C
With Internal Capacitor TC (F) 0±250ppm/°C
Optional Internal Capacitance Values: 5-100pF (1)





Unit: mm

Features

- Spiral wound with high number of closely spaced slots on form, yields low distributed capacitance, low temperature coefficient, and added stability in humid conditions.
- Large capacity bobbin for higher inductance requirement.

STANDARD COILS SELECTION GUIDE

(1) As an option, this type is available with a funnel tapered slot for automatic alignment machines.

TYPE 7KMM

TOKO Part Number	Inductance Range (μH)	Q (min.)	Test Frequency (MHz)
292KNAS-T1028Z	0.10 ±6%	35	50.0
292KNAS-T1029Z	0.12±6%	35	50.0
292KNAS-T1030Z	0.15±6%	35	50.0
292KNAS-T1031Z	0.18±6%	35	50.0
292KNAS-T1032Z	0.22±6%	50	50.0
292KNAS-T1033Z	0.27±6%	50	50.0
292KNAS-T1034Z	0.33±6%	50	50.0
292KNAS-T1035Z	0.39±6%	50	50.0
292KNAS-T1036Z	0.47±6%	50	50.0
292KNAS-T1037Z	0.56±6%	50	50.0
292KNAS-T1038Z	0.68±6%	50	50.0
292KNAS-T1039Z	0.82±6%	50	50.0
292CNS-T1040Z	1.0±6%	40	7.96
292CNS-T1041Z	1.2±6%	40	7.96
292CNS-T1042Z	1.5±6%	40	7.96
292CNS-T1043Z	1.8±6%	40	7.96
292CNS-T1044Z	2.2±6%	40	7.96
292CNS-T1045Z	2.7±6%	40	7.96
292CNS-T1046Z	3.3±6%	40	7.96
292CNS-T1047Z	3.9±6%	40	7.96
292CNS-T1048Z	4.7±6%	40	7.96
292CNS-T1049Z	5.6±6%	40	7.96
292CNS-T1050Z	6.8±6%	40	7.96
292CNS-T1051Z	8.2±6%	40	2.52
F292CNS-T1052Z	10.0±6%	35	2.52
F292CNS-T1053Z	12.0±6%	35	2.52
F292CNS-T1054Z	15.0±6%	35	2.52
F292CNS-T1055Z	18.0±6%	35	2.52
F292CNS-T1056Z	22.0±6%	35	2.52
F292CNS-T1057Z	27.0±6%	35	2.52
F292CNS-T1058Z	33.0±6%	35	2.52
F292CNS-T1059Z	39.0±6%	35	2.52
F292CNS-T1060Z	47.0±6%	35	2.52
F292CNS-T1061Z	56.0±6%	35	2.52
F292CNS-T1062Z	68.0±6%	35	2.52
F292CNS-T1063Z	82.0±6%	35	2.52

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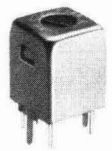
TYPE 7KMM High Frequency[1]

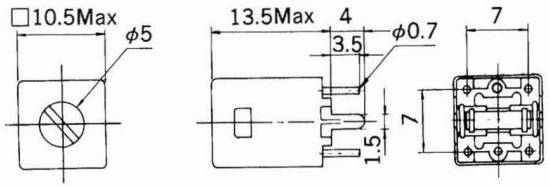
TOKO Part Number	Inductance Range (μH)	Q (min.)	Test Frequency (MHz)
292SNS-T1365Z	0.08±2%	50	80.0
292SNS-T1366Z	0.10±6%	50	80.0
292SNS-T1367Z	0.15±6%	60	80.0
292SNS-T1368Z	0.22±6%	60	80.0
292SNS-T1369Z	0.33±6%	60	80.0
292SNS-T1370Z	0.47±6%	60	50.0
292SNS-T1371Z	0.68±6%	60	50.0
292KNS-T1372Z	1.00±6%	40	7.96
292KNS-T1373Z	1.50±6%	40	7.96
292KNS-T1374Z	2.20±6%	40	7.96
292KNS-T1375Z	3.30±6%	40	7.96
292KNS-T1376Z	4.70±6%	40	7.96
292KNS-T1377Z	6.80±6%	40	7.96
292KNS-T1378Z	10.00±6%	40	7.96

[1]Recommended for use with Motorola linear IC's

10mm TYPE 10EZ, 10EZ High Frequency

Frequency Range: 0.2-2MHz (10EZ)
2-15MHz (10EZ High Freq.)
Inductance Range: 1μH-2mH (10EZ)
2-55μH (10EZ High Freq.)
Temperature Coeffiecient: Inductor TC (L)750±500ppm/°C
220±220ppm/°C (10EZ High Freq.)
With Internal Capacitor TC (F) 0±250ppm/°C
Internal Capacitance Value: 150-390pF (10EZ),
5-100pF (10EZ High Freq.)





(Unit: mm)

Features

- Most economical and widely used coil in the world for AM and FM IFTs.
- Automatic insertion packaging available.

STANDARD COILS SELECTION GUIDE

TYPE 10EZ

TOKO Part Number	Inductance Range (μH)	Turns Ratio: 1-3/1-2	Turns Ratio: 1-3/4-6	Q (min.)	Test Frequency (kHz)
RAN-10A6729EK	630±10%	154:29	154:4	95±20%	200
RAN-10A6845EK	630±10%	154:9	154:4	95±20%	200
RUNS-T1027Z	1000±10%			50	252
RUNS-T1028Z	1200±10%			50	252
RUNS-T1029Z	1500±10%			50	252
RUNS-T1030Z	1800±10%			50	252
RWO-6A5105BM	360±6%		98:28	80	796
RWO-6A6255N	270±6%	85:3	85:8	65(@1.4MHz)	796
RWR-151208N2	150±6%	65:2	65:8	90(@1.4MHz)	796
RWR-151308N0	150±6%	65:3	65:8	90(@1.4MHz)	796
RWR-271208N2	270±6%	85:2	84:8	60(@1.4MHz)	796
RWR-271308N0	270±6%	85:3	85:8	80(@1.4MHz)	796
RWR-331208N2	330±6%	94:2	94:2	70(@1.4MHz)	796
RWR-331308N0	330±6%	94:3	94:8	70(@1.4MHz)	796
RWR-361208N2	360±6%	98:2	98:2	80(@1.4MHz)	796
RWR-361308N2	360±6%	98:2	98:8	80(@1.4MHz)	796
RWR-361412N2	360±6%	100:4	100:12	50(@1.4MHz)	796
RWRS-T1015Z	100±10%			100	796
RWRS-T1016Z	120±10%			100	796
RWRS-T1017Z	150±10%			100	796
RWRS-T1018Z	180±10%			100	796
RWRS-T1019Z	220±10%			100	796
RWRS-T1020Z	270±10%			100	796
RWRS-T1021Z	330±10%			100	796
RWRS-T1022Z	390±10%			100	796
RWRS-T1023Z	470±10%			100	796
RWRS-T1024Z	560±10%			100	796
RWRS-T1025Z	680±10%			100	796
RWRS-T1026Z	820±10%			100	796

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10mm TYPE 10EZ With Internal Capacitor

STANDARD COILS SELECTION GUIDE

TYPE 10EZ

TOKO Part Number	Capacitance Value (pF)	Turns Ratio:Q 1-3/1-2	Turns Ratio:Q 1-3/4-6	Frequency (min.)	Test (kHz)
RLC-252142N0	180+10(ext)	173:30	173:24	70±20%	455
RLC-352142N0	180+10(ext)	173:112	173:24	70±20%	455
RLC-352223N0	180+ 5(ext)	173:112	173:4	70±20%	455
RLC-352503N0	180+10(ext)	173:112	173:9	70±20%	455
RLC-352713N0	180+10(ext)	173:112	173:12	70±20%	455
RLC-452503N0	180+10(ext)	173:95	173:9	70±20%	455
RLC-4A5129EK	180+10(ext)	173:30	172:4	75±20%	455
RLC-4A5130N	180+10(ext)	172:142	172:4	75±20%	455
RMC-14600A	180+10(ext)	165:79	165:9	110±20%	455
RMC-14601A	180+10(ext)	165:99	165:9	110±20%	455
RMC-14602A	180+10(ext)	165:118	55:9	110±20%	455
RMC-15002A	180+10(ext)	165:91	165:42	110±20%	455
RMC-162453N0	180+10(ext)	164:138	164:7	110±20%	455
RMC-202202N0	180+10(ext)	164:131	164:33	110±20%	455
RMC-202313N0	180+10(ext)	164:131	164:5	110±20%	455
RMC-202503N0	180+10(ext)	164:131	41:2	110±20%	455
RMC-222162N0	180+10(ext)	164:127	82:13	110±20%	455
RMC-222633N0	180+10(ext)	164:127	82:5	110±20%	455
RMC-2A6597HM	180+ 5(ext)			120±20%	455
RMC-2A7287HM	180+ 5(ext)			110±20%	455
RMC-312162N0	180+10(ext)	164:112	164:26	110±20%	455
RMC-402353N0	180+10(ext)	164:98	164:6	110±20%	455
RMC-402503N0	180+10(ext)	164:98	164:8	110±20%	455
RMC-452252N0	180+10(ext)	164:90	164:41	110±20%	455
RMC-502182N0	180+10(ext)	164:82	164:30	110±20%	455
RMC-502503N0	180+10(ext)	164:82	164:8	110±20%	455
ROC-15000A	180+10(ext)	176:135	176:4	60±20%	455
ROC-15001A	180+10(ext)	176:114	176:4	60±20%	455
RZC-1A5022N	180+10(ext)	142:71	142:36	150±20%	455
RZC-1A6425A	180+ 5(ext)	154:77	154:38	140±20%	455

TYPE 10EZ High Frequency

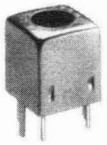
TOKO Part Number	Inductance Range (µH)	Q (min.)	Freq. MHz
154ANS-T1005Z	4.7±10%	100	7.96
154ANS-T1006Z	5.6±10%	100	7.96
154ANS-T1007Z	6.8±10%	100	7.96
154ANS-T1008Z	8.2±10%	100	7.96
154ANS-T1009Z	10.0±10%	60	2.52
154ANS-T1010Z	12.0±10%	60	2.52
154ANS-T1011Z	15.0±10%	60	2.52
154ANS-T1012Z	18.0±10%	60	2.52
154ANS-T1013Z	22.0±10%	60	2.52
154ANS-T1014Z	27.0±10%	60	2.52
154ANS-T1015Z	33.0±10%	60	2.52
154ANS-T1016Z	39.0±10%	60	2.52
154ANS-T1017Z	47.0±10%	60	2.52
154ANS-T1018Z	56.0±10%	60	2.52
154ANS-T1019Z	68.0±10%	60	2.52
154ANS-T1020Z	82.0±10%	60	2.52

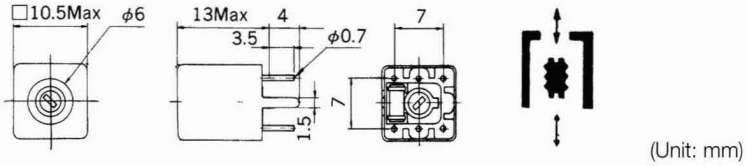
TYPE 10EZ High Frequency with Internal Capacitor

TOKO Part Number	Tuning Capacitance[1] (pF)	Turns Ratio: 1-3/2-3	1-3/4-6	Others	Q	Test Freq. (MHz)
154AC-470032N0	47+5(ext)	14:3	14:2		110±20%	10.7
154AC-470033N0	47+5(ext)	14:3	14:3		110±20%	10.7
154AC-470052N0	45+5(ext)	14:5	14:2		120±20%	10.7
154AC-470072N0	47+5(ext)	14:7	14:2		110±20%	10.7
154AC-470073N0	47+5(ext)	14:7	14:3		120±20%	10.7
154AC-470084L0	47+3(ext)			4-3/2-3 13.5:8.0 4-3/1-5 13.5:4.5	95±20%	10.7
154AC-470085L0	47+3(ext)			4-3/2-3 13.5:8.0 4-3/1-5 13.5:5.5	85±20%	10.7
154AC-7A5681EK	47+3(ext)	7:4	14:1		110±20%	10.7
154AC-820111M0	82+5(ext)			2-3/4-6 11:1	100±20%	10.7
154AC-820112M0	82+5(ext)			2-3/4-6 11:2	95±20%	10.7
154FC-560061N0	56+0(ext)	2:1	12:1		120±20%	10.7
154FC-820051N0	82+0(ext)	2:1	10:1		110±20%	10.7
154PC-470033N0	47+5(ext)	14:3	14:3		60±20%	10.7
154PC-470053N0	47+5(ext)	14:5	14:3		60±20%	10.7
154PC-470073N0	47+5(ext)	14:7	14:3		60±20%	10.7

10mm TYPE 10K

Frequency Range: 2-120MHz
Inductance Range: 0.08-82µH
Temperature Coefficient: Inductor TC (L) 220±150ppm/°C max
With Internal Capacitor TC (F) 0±150ppm/°C
Internal Capacitance Values: 5-100pF (1)





(Unit: mm)

Features

- Spiral wound with high number of closely spaced slots on form yields low distributed capacitance, low temperature coeffiecient, and added stability in humid conditions.
- Automatic insertion packaging available.

STANDARD COILS SELECTION GUIDE

(1) As an option, this type is available with a funnel tapered slot for automatic alignment machines.

TYPE 10K

TOKO Part Number	Inductance Range (µH)	Q (min.)	Test Frequency (MHz)	Shield
BTKENS-T1043Z	0.08±2%	50	75.0	YES
BTKENS-T1044Z	0.10±6%	60	75.0	YES
BTKENS-T1045Z	0.15±6%	60	75.0	YES
BTKENS-T1046Z	0.22±6%	60	75.0	YES
BTKXNS-T1047Z	0.33±6%	60	45.0	YES
BTKXNS-T1048Z	0.47±6%	70	45.0	YES
BTKXNS-9455HM	0.47±6%	80	25.2	YES
TKXNF-9427HM	0.47±6%	80	25.2	NO
BTKXNS-9454HM	0.56±6%	80	25.2	YES
TKXNF-9426HM	0.56±6%	80	25.2	NO
BTKXNS-T1049Z	0.68±6%	70	45.0	YES
BTKXNS-9453HM	0.68±6%	100	25.2	YES
TKXNF-9425HM	0.68±6%	80	25.2	NO
BTKXNS-9452HM	0.82±6%	100	25.2	YES
TKXNF-9424HM	0.82±6%	80	25.2	NO
BTKXNS-T1050Z	1.00±6%	80	25.2	YES
TKXNS-9451HM	1.0±6%	100	25.2	YES
TKXNF-9423HM	1.0±6%	80	25.2	NO
BTKANS-9450HM	1.2±6%	60	7.96	YES
TKANF-9422HM	1.2±6%	50	7.96	NO
BTKANS-9449HM	1.5±6%	60	7.96	YES
TKANF-9421HM	1.5±6%	55	7.96	NO
BTKANS-9448HM	1.8±6%	60	7.96	YES
TKANF-9420HM	1.8±6%	60	7.96	NO
BKTANS-9447HM	2.2±6%	60	7.96	YES
TKANF-9419HM	2.2±6%	65	7.96	NO
BTKANS-9446HM	2.7±6%	70	7.96	YES
TKANF-9418HM	2.7±6%	65	7.96	NO
BTKANS-9445HM	3.3±6%	70	7.96	YES

continued from previous page

STANDARD COILS SELECTION GUIDE

TYPE 10K (cont.)

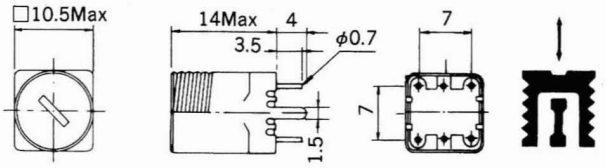
TOKO Part Number	Inductance Range (μH)	Q (min.)	Test Frequency (MHz)	Shield
TKANF-9417HM	3.3±6%	70	7.96	NO
TKAN-9444HM	3.9±6%	70	7.96	YES
TKANF-9416HM	3.9±6%	70	7.96	NO
BTKANS-9443HM	4.7±6%	70	7.96	YES
TKANF-9415HM	4.7±6%	65	7.96	NO
TKAN-9442HM	5.6±6%	70	7.96	YES
TKANF-9414HM	5.6±6%	70	7.96	NO
BTKANS-9441HM	6.8±6%	70	7.96	YES
TKANF-9413HM	6.8±6%	60	7.96	NO
TKAN-9440HM	8.2±6%	70	7.96	YES
TKANF-9412HM	8.2±6%	70	7.96	NO
BTKANS-9439HM	10.0±6%	70	7.96	YES
TKANF-9411HM	10.0±6%	70	7.96	NO
TKAN-9438HM	12.0±6%	55	2.52	YES
TKANF-9410HM	12.0±6%	60	2.52	NO
BTKANS-9437HM	15.0±6%	50	2.52	YES
TKANF-9409HM	15.0±6%	60	2.52	NO
TKAN-9436HM	18.0±6%	50	2.52	YES
TKANF-9408HM	18.0±6%	50	2.52	NO
BTKANS-9435HM	22.0±6%	50	2.52	YES
TKANF-9407HM	22.0±6%	45	2.52	NO
TKAN-9434HM	27.0±6%	50	2.52	YES
TKANF-9406HM	27.0±6%	50	2.52	NO
BTKANS-9433HM	33.0±6%	50	2.52	YES
TKANF-9405HM	33.0±6%	50	2.52	NO
BTKANS-9432HM	39.0±6%	45	2.52	YES
TKANF-9404HM	39.0±6%	50	2.52	NO
BTKANS-9431HM	47.0±6%	45	2.52	YES
TKANF-9403HM	47.0±6%	50	2.52	NO
BTKANS-9430HM	56.0±6%	50	2.52	YES
TKANF-9402HM	56.0±6%	50	2.52	NO
BTKANS-9429HM	68.0±8%	50	2.52	YES
TKANF-9401HM	68.0±6%	60	2.52	NO
BTKANS-9428HM	82.0±8%	50	2.52	YES
TKANF-9400HM	82.0±6%	60	2.52	NO

TYPE 10K with Internal Capacitor (Detector coil for quadrature coil)

TOKO Part Number	Tuning Capacitance[1] (pF)	Turns Ratio 1-3/2-3	Turns Ratio 1-3/4-6	Q	Test Frequency (MHz)
TKACS-6184A	82 + 5 (ext)	13:3	13:3	65±20%	10.7
BTKAC-28551Z	100 + 0 (ext)			55±20%	5.5
YBTKAES-29882Z	47 +10 (ext)			55±20%	4.5
YTKAEAS-29377Z	82 + 0 (ext)			60±20%	10.7

10mm TYPE 10PA

Frequency Range: 10-200kHz
Inductance Range: 1-56mH
Temperature Coefficient: TC (L) 220±220ppm/°C max



Unit: mm

Features

- The larger drum and cup core produces high inductance and greatly improves saturation levels. This increased inductance makes this coil ideal for oscillator and audio filter applications.

STANDARD COILS SELECTION GUIDE

TYPE 10PA

TOKO Part Number	Inductance Range (mH)	Q (min.)	Test Frequency (KHz)
CLNS-T1018Z	1.0±10%	80	252
CLNS-T1019Z	1.2±10%	80	252
CLNS-T1020Z	1.5±10%	80	252
CLNS-T1021Z	1.8±10%	80	252
CLNS-T1022Z	2.2±10%	80	252
CLNS-T1023Z	2.7±10%	80	252
CLNS-T1024Z	3.3±10%	80	252
CLNS-T1025Z	3.9±10%	80	252
CLNS-T1026Z	4.7±10%	80	252
CLNS-T1027Z	5.6±10%	80	252
CLNS-T1028Z	6.8±10%	80	252
CLNS-T1029Z	8.2±10%	80	252
CLNS-T1030Z	10.0±10%	70	79.6
CLNS-T1031Z	12.0±10%	70	79.6
CLNS-T1032Z	15.0±10%	70	79.6
CLNS-T1033Z	18.0±10%	70	79.6
CLNS-T1034Z	22.0±10%	70	79.6
CLNS-T1035Z	27.0±10%	70	79.6
CLNS-T1036Z	33.0±10%	70	79.6
CLNS-T1037Z	39.0±10%	70	79.6
CLNS-T1038Z	47.0±10%	70	79.6
CLNS-T1039Z	56.0±10%	70	79.6

TOKO

Molded Coils
Molded Coils for Surface Mounting
Bias OSC Coils

CONTENTS

Molded Coils

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MC119 97
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MC137 101
MC138 102
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Molded Coils for Surface Mounting

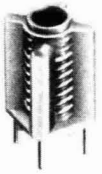
MC152 106

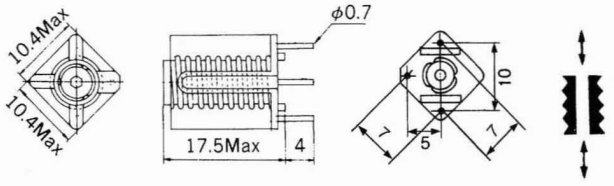
Bias OSC Coils

12VXA 108
15RSL 109

MC117

Space Wound
Frequency Range: 30MHz-150MHz(1)
Inductance Range: 0.02-0.40µH





Unit: mm

Features

- The MC117 is a very high stability coil based on the dimensions of the MC120 molded coil. It is designed for a space wound coil with an optional tap encapsulated within the molding of the coil assembly.
- Shielded case available.

STANDARD COILS SELECTION GUIDE

(1) Alternate use of an aluminum core will increase the usable frequency of any specific coil form, however inductance is reduced. These cores may also be substituted for ferrite as a means of lowering Q.

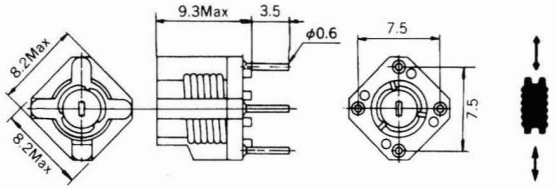
(2) Inductance values for reference only.

TYPE MC117

TOKO Part Number(1)	Number of Turns (Space)	Color Code	Inductance(2) (µH)	Q (min.)	Test Frequency (MHz)	Tuning Capacitance Range (pF)	Shielded Case
E523HN-1000029	1½	WHITE	0.0373µH	156	100 MHz	68.0pF±5%	NO
E523HN-2000052	2½	RED	0.0667µH	136	100 MHz	38.0pF±7%	NO
E523HN-3000143	3½	ORANGE	0.1013µH	216	100 MHz	25.0pF±7%	NO
E523HN-4000124	4½	YELLOW	0.1583µH	186	100 MHz	16.0pF±6%	NO
E523HN-5000145	5½	GREEN	0.2110µH	164	100 MHz	12.0pF±6%	NO
E523HN-6000146	6½	BLUE	0.2349µH	198	70 MHz	22.0pF±6%	NO
E523HN-7000097	7½	VIOLET	0.3040µH	192	70 MHz	17.0pF±6%	NO
E523HN-8000169	8½	WHITE	0.3976µH	138	70 MHz	13.0pF±4%	NO
E523AN-1000059	1½	WHITE	0.0325µH	130	100 MHz	78.0pF±3%	NO
E523AN-2000142	2½	RED	0.0487µH	130	100 MHz	52.0pF±3%	NO
E523AN-3000253	3½	ORANGE	0.0667µH	135	100 MHz	38.0pF±3%	NO
E523AN-4000194	4½	YELLOW	0.0845µH	114	100 MHz	30.0pF±4%	NO
E523AN-5000265	5½	GREEN	0.1010µH	125	100 MHz	25.0pF±3%	NO
E523AN-6000286	6½	BLUE	0.1260µH	135	100 MHz	20.0pF±4%	NO
E523AN-7000197	7½	VIOLET	0.1490µH	128	100 MHz	17.0pF±4%	NO
E523AN-8000099	8½	WHITE	0.1630µH	120	100 MHz	15.5pF±4%	NO
E523HNA-1000049	1½	WHITE	0.0338µH	70	100 MHz	75.0pF±2%	YES
E523HNA-2000102	2½	RED	0.0551µH	100	100 MHz	46.0pF±4%	YES
E523HNA-3000213	3½	ORANGE	0.0792µH	130	100 MHz	32.0pF±6%	YES
E523HNA-4000114	4½	YELLOW	0.1101µH	110	100 MHz	23.0pF±4%	YES
E523HNA-5000185	5½	GREEN	0.1407µH	105	100 MHz	18.0pF±6%	YES
E523HNA-6000216	6½	BLUE	0.1948µH	85	100 MHz	13.0pF±6%	YES
E523HNA-7000147	7½	VIOLET	0.2165µH	70	100 MHz	11.7pF±6%	YES
E523HNA-8000069	8½	WHITE	0.2265µH	105	90 MHz	13.8pF±3%	YES
E523ANA-1000039	1½	WHITE	0.0281µH	76±20%	100 MHz	90.0pF±2%	YES
E523ANA-2000122	2½	RED	0.0422µH	85±20%	100 MHz	60.0pF±4%	YES
E523ANA-3000203	3½	ORANGE	0.0563µH	85±20%	100 MHz	45.0pF±4%	YES
E523ANA-4000134	4½	YELLOW	0.0724µH	75	100 MHz	35.0pF±4%	YES
E523ANA-5000155	5½	GREEN	0.0859µH	75	100 MHz	29.5pF±3%	YES
E523ANA-6000306	6½	BLUE	0.1013µH	105±20%	100 MHz	25.0pF±4%	YES
E523ANA-7000137	7½	VIOLET	0.1267µH	80	100 MHz	20.0pF±4%	YES
E523ANA-8000019	8½	WHITE	0.1407µH	80	100 MHz	18.0pF±3%	YES

MC119

Space Wound: Inductance Range 0.03-0.08µH
Close Wound: Inductance Range 0.03~0.02µH
Frequency Range: 30-150MHz(1)
Temperature Coefficient: 150ppm/°C max



Unit: mm

STANDARD COILS SELECTION GUIDE

(1) Alternate use of an aluminum core in items listed will increase the usable frequency of any specific coil form, however inductance is reduced. These cores may also be substituted for ferrite as a means of lowering Q.

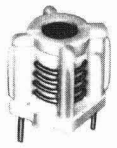
(2) C=Close, S=Space
(3) Inductance values for reference only.

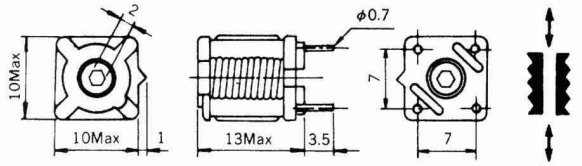
TYPE MC119

TOKO Part Number(1)	Number of Turns(2)	Color Code	Inductance(3) (µH)	Q (min.)	Test Frequency (MHz)	Tuning Capacitance Range (pF)
E525HNS-100001	C1½	ORANGE	0.03	150	100	82±3%
E525HNS-100002	C2½	ORANGE	0.05	120	100	45±4%
E525HNS-100003	C3½	ORANGE	0.09	115	100	28±4%
E525HNS-100004	C4½	ORANGE	0.14	105	100	18.3±3%
E525HNS-100005	C5½	ORANGE	0.20	90	100	12.6±3%
E525HNS-100006	C6½	ORANGE	0.24	90	100	10.8±3%
E525HN-100039	S1½	ORANGE	0.03	120	100	80±4%
E525HN-100007	S2½	ORANGE	0.05	135	100	48±3%
E525HN-100008	S3½	ORANGE	0.08	140	100	30±2%

TYPE MC120

Space Wound: Inductance Range 0.04-0.21μH
Close Wound: Inductance Range0.04-0.53μH
Frequency Range: 30-150MHz(1)
Temperature Coefficient: 150ppm/°C, max.





Unit: mm

Features

- Popular for low profile applications.
- Limited 13mm high devices and terminal locations are same as 10EZ/10K series.
- Shielded case available.

STANDARD COILS SELECTION GUIDE

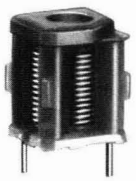
(1) Alternate use of aluminum core in items listed will increase the frequency of any specific coil form. However, inductance is reduced. These cores may also be substituted for ferrite as a means of lowering Q.
(2) C=Close, S=Space
(3) Inductance values for reference only.

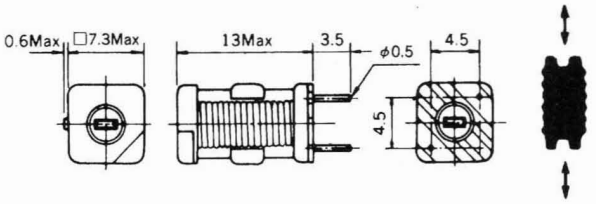
TYPE MC120

TOKO Part Number(1)	Number of Turns(2)	Color Code	Inductance(3) (μH)	Q (min.)	Test Frequency (MHz)	Tuning Capacitance Range (pF)	Shielded Case
E526HNA-100294	C1½	BROWN	0.04	80	100	64.5±2%	YES
E526HNA-100295	C2½	RED	0.06	90	100	39.0±3%	YES
E526HNA-100296	C3½	ORANGE	0.09	100	100	25.5±3%	YES
E526HNA-100297	C4½	YELLOW	0.14	100	100	18.0±3%	YES
E526HNA-100298	C5½	GREEN	0.17	80	50	60.0±3%	YES
E526HNA-100299	C6½	BLUE	0.21	80	50	48.0±3%	YES
E526HNA-100300	C7½	VIOLET	0.24	80	50	42.0±3%	YES
E526HNA-100301	C8½	GRAY	0.28	80	50	35.0±3%	YES
E526HNA-100079	C9½	WHITE	0.33	80	50	30.0±3%	YES
E526HN-100302	C1½	BROWN	0.04	120	100	55.0±3%	NO
E526HN-100303	C2½	RED	0.08	130	100	30.0±3%	NO
E526HN-100304	C3½	ORANGE	0.13	130	100	19.5±3%	NO
E526HN-100305	C4½	YELLOW	0.19	140	100	13.0±3%	NO
E526HN-100306	C5½	GREEN	0.24	100	50	42.0±3%	NO
E526HN-100307	C6½	BLUE	0.31	100	50	32.0±3%	NO
E526HN-100308	C7½	VIOLET	0.35	100	50	28.5±3%	NO
E526HN-100309	C8½	GRAY	0.44	100	50	23.0±3%	NO
E526HN-100109	C9½	WHITE	0.53	100	50	19.0±2%	NO
E526HNA-100310	S1½	BROWN	0.03	80	100	69.0±2%	YES
E526HNA-100311	S2½	RED	0.05	90	100	43.5±3%	YES
E526HNA-100312	S3½	ORANGE	0.08	110	100	30.0±3%	YES
E526HNA-100313	S4½	YELLOW	0.10	110	100	23.5±3%	YES
E526HNA-100314	S5½	GREEN	0.13	110	100	18.5±2%	YES
E526HN-100315	S1½	BROWN	0.04	100	100	58.0±3%	NO
E526HN-100316	S2½	RED	0.07	150	100	34.0±3%	NO
E526HN-100317	S3½	ORANGE	0.11	170	100	21.5±3%	NO
E526HN-100318	S4½	YELLOW	0.15	180	100	16.5±3%	NO
E526HN-100319	S5½	GREEN	0.21	190	100	12.0±3%	NO

MC134

Close Wound
Frequency Range: 30MHz-150MHZ(1)
Inductance Range: 0.03-0.68µH
Temperature Coefficient: 150ppm/°C, max.





Unit: mm

Features

- A single close winding without a tap.
- Taller coil form achieves higher inductance.
- Shielded case available.

STANDARD COILS SELECTION GUIDE

(1) Alternate use of an aluminum core will increase the usable frequency of any specific coil form, however inductance is reduced. These cores may also be substituted for ferrite as a means of lowering Q.

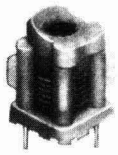
(2) Inductance values for reference only.
(3) Minimum inductance value core position (12.5T to 15.5T) 2 turns off from top of bobbin or shield case.

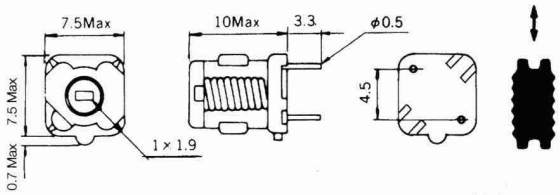
TYPE MC134

TOKO Part Number(1)	Number of Turns (Close)	Color Code	Inductance(2), (3) (µH)	Q (min.)	Test Frequency (MHz)	Tuning Capacitance Range (pF)	Shielded Case
E540SNA-01002	1½	BROWN	0.03	60	100	83.5±3%	YES
E540SNA-02002	2½	RED	0.05	60	100	51.0±5%	YES
E540SNA-03002	3½	ORANGE	0.07	70	100	34.8±8%	YES
E540SNA-04005	4½	YELLOW	0.10	70	100	25.0±8%	YES
E540SNA-05002	5½	GREEN	0.13	70	100	19.5±8%	YES
E540SNA-06002	6½	BLUE	0.16	70	100	15.5±8%	YES
E540SNA-07005	7½	VIOLET	0.19	70	80	21.0±8%	YES
E540SNA-08002	8½	GRAY	0.22	70	80	18.0±8%	YES
E540SNA-09003	9½	WHITE	0.25	70	80	15.6±8%	YES
E540SNA-10005	10½	BLACK	0.26	50	50	39.0±8%	YES
E540SNA-11003	11½	BROWN	0.29	50	50	34.5±7%	YES
E540SNA-12003	12½	RED	0.31	60	50	32.0±8%	YES
E540SNA-13003	13½	ORANGE	0.35	60	50	29.0±8%	YES
E540SNA-14002	14½	YELLOW	0.38	60	50	26.5±7%	YES
E540SNA-15002	15½	GREEN	0.42	55	50	24.0±5%	YES
E540SN-01001	1½	BROWN	0.03	80	100	76.0±6%	NO
E540SN-02001	2½	RED	0.06	85	100	43.0±9%	NO
E540SN-03001	3½	ORANGE	0.09	90	100	27.0±10%	NO
E540SN-04004	4½	YELLOW	0.13	90	100	18.8±10%	NO
E540SN-05001	5½	GREEN	0.18	90	100	14.0±10%	NO
E540SN-06001	6½	BLUE	0.23	90	100	11.0±10%	NO
E540SN-07004	7½	VIOLET	0.27	90	80	14.5±10%	NO
E540SN-08001	8½	GRAY	0.32	90	80	12.5±10%	NO
E540SN-09002	9½	WHITE	0.38	90	80	10.3±10%	NO
E540SN-10004	10½	BLACK	0.39	80	50	25.5±10%	NO
E540SN-11002	11½	BROWN	0.45	80	50	22.5±8%	NO
E540SN-12002	12½	RED	0.48	80	50	21.0±10%	NO
E540SN-13002	13½	ORANGE	0.54	80	50	18.6±10%	NO
E540SN-14001	14½	YELLOW	0.60	80	50	16.8±8%	NO
E540SN-15001	15½	GREEN	0.68	80	50	14.8±7%	NO

MC136

Close Wound
Frequency Range: 30MHz-250MHz(1)
Inductance Range: 0.03-0.45µH
Temperature Coefficient: 150ppm/°C, max.





Unit: mm

Features

- Bottom end construction is without tuning hole.
- Shielded case available.

STANDARD COILS SELECTION GUIDE

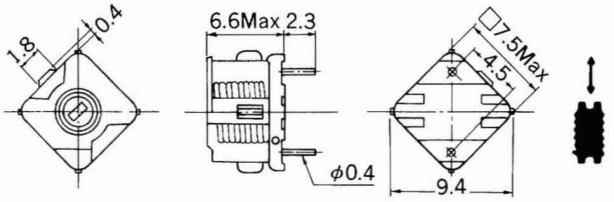
(1) Alternate use of an aluminum core will increase the usable frequency of any specific coil form, however inductance is reduced. These cores may also be substituted for ferrite as a means of lowering Q.
(2) Max. freq. E542DN...80MHz. E542SN...120MHz.
(3) Inductance values for reference only.
(4) C max. core position...2 turns off from top of shield case or bobbin.

TYPE MC136

TOKO Part Number(1) (2)	Number of Turns	Color Code	Inductance(3) (µH)	Q (min.)	Test Frequency (MHz)	Tuning Capacitance(4) Range (pF)	Shielded Case
E542SNAS-100072	1½	WHITE	0.03	60	100	78.5±3%	YES
E542SNAS-100073	2½	RED	0.05	80	100	48.5±4%	YES
E542SNAS-100074	3½	ORANGE	0.08	90	100	32.5±6%	YES
E542SNAS-100075	4½	YELLOW	0.10	90	100	23.5±6%	YES
E542SNAS-100076	5½	GREEN	0.15	90	100	17.0±6%	YES
E542DNAS-100077	3½	ORANGE	0.08	70	57	100±6%	YES
E542DNAS-100078	4½	YELLOW	0.10	70	57	76.0±6%	YES
E542DNAS-100079	5½	GREEN	0.13	70	57	59.0±6%	YES
E542DNAS-100080	6½	BLUE	0.16	70	57	49.0±6%	YES
E542DNAS-100081	7½	VIOLET	0.20	70	57	38.5±6%	YES
E542DNAS-100082	8½	WHITE	0.23	60	45	55.5±8%	YES
E542DNAS-100083	9½	RED	0.25	60	45	50.0±8%	YES
E542DNAS-100084	10½	ORANGE	0.29	60	45	43.0±6%	YES
E542SN-100059	1½	WHITE	0.03	90	100	72.0±3%	NO
E542SN-100060	2½	RED	0.06	110	100	42.0±6%	NO
E542SN-100061	3½	ORANGE	0.10	120	100	26.5±8%	NO
E542SN-100062	4½	YELLOW	0.14	120	100	18.5±8%	NO
E542SN-100063	5½	GREEN	0.20	110	100	13.0±8%	NO
E542DN-100064	3½	ORANGE	0.09	100	57	85.8±8%	NO
E542DN-100065	4½	YELLOW	0.13	100	57	60.0±8%	NO
E542DN-100066	5½	GREEN	0.17	100	57	44.0±8%	NO
E542DN-100067	6½	BLUE	0.21	100	57	36.5±8%	NO
E542DN-100068	7½	VIOLET	0.29	90	57	27.0±6%	NO
E542DN-100069	8½	WHITE	0.31	80	45	39.5±6%	NO
E542DN-100070	9½	RED	0.38	80	45	33.0±6%	NO
E542DN-100071	10½	ORANGE	0.45	70	45	28.0±5%	NO

MC137

Close Wound
Frequency Range: 30MHz-150MHz(1)
Inductance Range: 0.02-0.40µH
Temperature Coefficient: 150ppm/°C, max.



Unit: mm

Features

- Very low profile for compact designs. Form is designed to accommodate a single close winding without tap.
- Also available without case.

STANDARD COILS SELECTION GUIDE

(1) Alternate use of an aluminum core will increase the usable frequency of any specific coil form, however inductance is reduced. These cores may also be substituted for ferrite as a means of lowering Q.
(2) Inductance values for reference only.

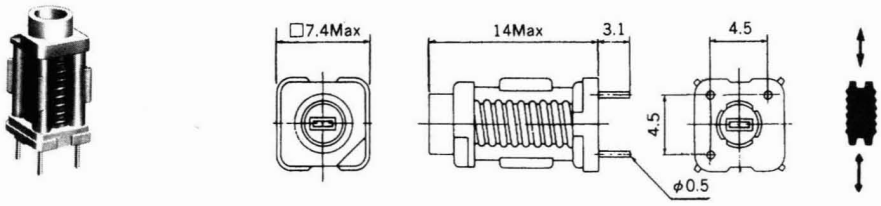
TYPE MC137

TOKO Part Number(1)	Number of Turns	Color Code	Inductance(2) (µH)	Q (min.)	Test Frequency (MHz)	Tuning Capacitance Range (pF)	*Shielded Case
E543SNAS-01009	1½	WHITE	0.031	55	100	83.0±2%	YES
E543SNAS-02010	2½	RED	0.051	65	100	49.5±3%	YES
E543SNAS-03015	3½	ORANGE	0.079	70	100	32.0±3%	YES
E543SNAS-04011	4½	YELLOW	0.112	70	100	22.6±3%	YES
E543SNAS-05012	5½	GREEN	0.152	70	100	16.7±3%	YES
E543SNAS-06013	6½	BLUE	0.195	70	100	13.0±3%	YES

* Other: Also available without case.

MC138

Space Wound
Frequency Range: 30MHz-250MHz(1)
Inductance Range: 0.03-0.2μH
Temperature Coefficient: 150ppm/°C, max.



Unit: mm

Features

- Similar to MC122 except that form is designed to accommodate a single space wound coil with tap, to achieve higher inductance and Q. Also provides wider tuning range.
- Shielded case also available.

STANDARD COILS SELECTION GUIDE

(1) Alternate use of an aluminum core will increase the usable frequency of any specific coil form, however inductance is reduced. These cores may also be substituted for ferrite as a means of lowering Q.
(2) Inductance values for reference only.

TYPE MC138

TOKO Part Number(1)	Number of Turns	Color Code	Inductance(2) (μH)	Q (min.)	Test Frequency (MHz)	Tuning Capacitance Range (pF)	Shielded Case
Aluminum Core							
E544ANAS-100031	1½	WHITE	0.027	70	100	93.5±1%	YES
E544ANAS-100032	2½	RED	0.037	70	100	68.0±2%	YES
E544ANAS-100033	3½	ORANGE	0.048	70	100	52.3±3%	YES
E544ANAS-100034	4½	YELLOW	0.061	70	100	41.5±5%	YES
E544ANAS-100035	5½	GREEN	0.074	70	100	34.0±5%	YES
E544ANAS-100036	6½	BLUE	0.087	70	100	28.9±5%	YES
E544ANAS-100037	7½	VIOLET	0.102	70	100	24.7±5%	YES
E544ANAS-100038	8½	GRAY	0.117	70	100	21.6±4%	YES
E544AN-100041	1½	WHITE	0.028	70	100	88.1±1%	NO
E544AN-100042	2½	RED	0.042	80	100	60.0±4%	NO
E544AN-100043	3½	ORANGE	0.056	80	100	45.0±6%	NO
E544AN-100044	4½	YELLOW	0.072	80	100	35.0±8%	NO
E544AN-100045	5½	GREEN	0.089	80	100	28.2±8%	NO
E544AN-100046	6½	BLUE	0.108	80	100	23.3±8%	NO
E544AN-100047	7½	VIOLET	0.122	75	100	20.7±4%	NO
E544AN-100048	8½	GRAY	0.147	75	100	17.2±4%	NO

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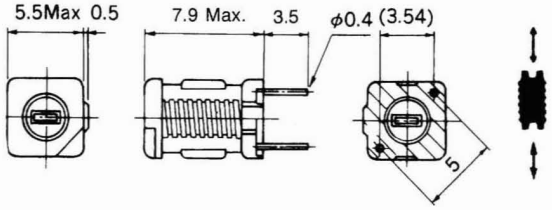
TYPE MC138 (cont'd)

TOKO Part Number[1]	Number of Turns	Color Code	Inductance[2] (μH)	Q (min.)	Test Frequency (MHz)	Tuning Capacitance Range (pF)	Shielded Case
Ferrite Core (30-200MHz)							
E544ENAS-100011	1 1/2	WHITE	0.030	80	100	84.8±2%	YES
E544ENAS-100012	2 1/2	RED	0.044	80	100	57.3±5%	YES
E544ENAS-100013	3 1/2	ORANGE	0.060	80	100	41.7±6%	YES
E544ENAS-100014	4 1/2	YELLOW	0.078	80	100	32.5±6%	YES
E544ENAS-100015	5 1/2	GREEN	0.096	80	100	26.2±7%	YES
E544ENAS-100016	6 1/2	BLUE	0.120	80	100	21.7±7%	YES
E544ENAS-100017	7 1/2	VIOLET	0.140	80	100	18.5±7%	YES
E544ENAS-100018	8 1/2	GRAY	0.160	80	100	15.8±6%	YES
E544EN-100021	1 1/2	WHITE	0.031	90	100	76.5±5%	NO
E544EN-100022	2 1/2	RED	0.053	110	100	47.3±8%	NO
E544EN-100023	3 1/2	ORANGE	0.077	125	100	32.8±12%	NO
E544EN-100024	4 1/2	YELLOW	0.104	130	100	24.2±12%	NO
E544EN-100025	5 1/2	GREEN	0.135	130	100	18.7±12%	NO
E544EN-100026	6 1/2	BLUE	0.160	130	100	15.2±12%	NO
E544EN-100027	7 1/2	VIOLET	0.200	130	100	12.5±12%	NO
E544EN-100028	8 1/2	GRAY	0.240	130	100	10.4±10%	NO

TYPE MC139

Space Wound
Frequency Range: 30MHz-250MHz(1)
Inductance Range: 0.012~0.134μH
Temperature Coefficient: 150ppm/°C, max.



Unit: mm

Features

- Ultra compact molded coil for RF stage in pager and small sized telecommunications equipment.
- Molded of high temperature grade resin to withstand the heat absorbed during soldering.
- Space wound and without tap.
- Shielded case also available.

STANDARD COILS SELECTION GUIDE

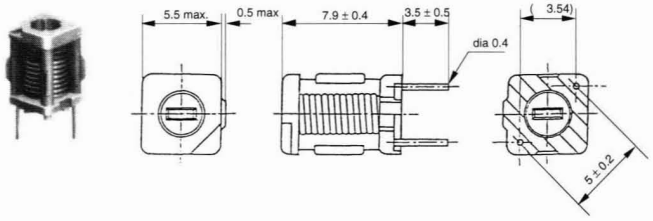
(1) Alternate use of brass core will increase the usable frequency of any specific coil form, however inductance is reduced. These cores may also be substituted for ferrite as a means of lowering Q.
(2) Minimum inductance value with core 2 turns above top of case. Applies to certain parts only.
(3) Q measured by Q meter.
(4) Inductance measured by HP-4191A at 100MHz for reference only.

TYPE MC139

TOKO Part Number(1)	Number(2) of Turns	Color Code	Inductance(4) (μH)	Q(3) (min.)	Test Frequency (MHz)	Tuning Range (%)	Shield Case
Ferrite Core							
NE545SN-100091	1½	WHITE	0.027	50	100	±3.5	NO
NE545SN-100092	2½	RED	0.036	80	100	±5	NO
NE545SN-100093	3½	ORANGE	0.060	100	100	±6	NO
NE545SN-100094	4½	YELLOW	0.083	120	100	±6	NO
NE545SN-100095	5½	GREEN	0.110	120	100	±6	NO
NE545SN-100096	6½	BLUE	0.134(2)	120	100	±6	NO
Brass Core							
NE545BN-100097	1½	WHITE	0.015	60	150	±2	NO
NE545BN-100098	2½	RED	0.024	55	150	±3	NO
NE545BN-100099	3½	ORANGE	0.035	55	150	±3.5	NO
NE545BN-100100	4½	YELLOW	0.054	50	150	±3.5	NO
NE545BN-100101	5½	GREEN	0.060(2)	50	150	±3.5	NO
NE545BN-100102	6½	BLUE	0.071(2)	50	150	±3.5	NO
Ferrite Core with shield case							
NE545SNAS-100103	1½	WHITE	0.015	45	100	±2	YES
NE545SNAS-100104	2½	RED	0.026	50	100	±3.5	YES
NE545SNAS-100105	3½	ORANGE	0.040	50	100	±4	YES
NE545SNAS-100106	4½	YELLOW	0.053	50	100	±4	YES
NE545SNAS-100107	5½	GREEN	0.069	50	100	±4	YES
NE545SNAS-100108	6½	BLUE	0.083(2)	50	100	±4	YES
Brass Core with shield case							
NE545BNAS-100081	1½	WHITE	0.012	55	150	±1.5	YES
NE545BNAS-100082	2½	RED	0.020	50	150	±2	YES
NE545BNAS-100083	3½	ORANGE	0.028	50	150	±2.5	YES
NE545BNAS-100084	4½	YELLOW	0.036	45	150	±2.5	YES
NE545BNAS-100085	5½	GREEN	0.048(2)	45	150	±2.5	YES
NE545BNAS-100086	6½	BLUE	0.056(2)	45	150	±2.5	YES

MC141[1]

Close Wound
Frequency Range: 30MHz-250MHZ
Inductance Range: 0.013-0.350µH
Temperature Coefficient: 150ppm/°C, max.



Unit: mm

Features

- Ultra compact molded coil for RF stage in pager and small sized telecommunications equipment.
- Molded of high temperature grade resin to withstand heat absorbed during soldering.
- Close wound and without tap.
- Shielded case also available.

STANDARD COILS SELECTION GUIDE

(1) Alternate use of brass core will increase the usable frequency of any specific coil form, however inductance is reduced. These cores may also be substituted for ferrite as a means of lowering Q.
(2) Minimum inductance values with core 2 turns above top of case. Applies to certain parts only.
(3) Q measured by Q meter.
(4) Inductance measured by HP-4191A at 100MHz for reference only.

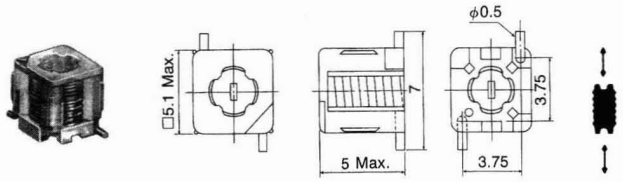
TYPE MC141

TOKO Part Number[1]	Number[2] of Turns	Color Code	Inductance[4] (µH)	Q[3] (min.)	Test Frequency (MHz)	Tuning Range (%)
Ferrite Core with shield case						
NE547SNAS-100101	1 1/2	WHITE	0.016	45	100	±2
NE547SNAS-100102	2 1/2	RED	0.030	50	100	±3.5
NE547SNAS-100103	3 1/2	ORANGE	0.046	50	100	±4.5
NE547SNAS-100104	4 1/2	YELLOW	0.065	50	100	±5
NE547SNAS-100105	5 1/2	GREEN	0.086	50	100	±5
NE547SNAS-100106	6 1/2	BLUE	0.106	50	100	±5
NE547SNAS-100107	7 1/2	VIOLET	0.130	50	100	±5
NE547SNAS-100108	8 1/2	GRAY	0.152[2]	50	100	±4.5
NE547SNAS-100109	9 1/2	WHITE	0.180[2]	45	100	±4.5
NE547SNAS-100110	10 1/2	BROWN	0.210[2]	45	100	±4
Brass Core with shield case						
NE547BNAS-100111	1 1/2	WHITE	0.013	55	150	±1.5
NE547BNAS-100112	2 1/2	RED	0.023	50	150	±2
NE547BNAS-100113	3 1/2	ORANGE	0.034	45	150	±3.5
NE547BNAS-100114	4 1/2	YELLOW	0.046	45	150	±3.5
NE547BNAS-100115	5 1/2	GREEN	0.058	40	150	±3.5
NE547BNAS-100116	6 1/2	BLUE	0.068	40	150	±3.5
NE547BNAS-100117	7 1/2	VIOLET	0.081	40	150	±3.5
NE547BNAS-100118	8 1/2	GRAY	0.100[2]	35	120	±3
NE547BNAS-100119	9 1/2	WHITE	0.115[2]	35	120	±3
NE547BNAS-100120	10 1/2	BROWN	0.130[2]	35	120	±3
Ferrite Core						
NE547SN-100121	1 1/2	WHITE	0.021	60	100	±3.5
NE547SN-100122	2 1/2	RED	0.041	80	100	±5
NE547SN-100123	3 1/2	ORANGE	0.065	80	100	±6
NE547SN-100124	4 1/2	YELLOW	0.095	90	100	±7
NE547SN-100125	5 1/2	GREEN	0.130	90	100	±7
NE547SN-100126	6 1/2	BLUE	0.166	90	100	±7
NE547SN-100127	7 1/2	VIOLET	0.211	90	100	±7
NE547SN-100128	8 1/2	GRAY	0.250[2]	80	80	±6
NE547SN-100129	9 1/2	WHITE	0.300[2]	80	80	±6
NE547SN-100130	10 1/2	BROWN	0.350[2]	80	80	±5
Brass Core						
NE547BN-100131	1 1/2	WHITE	0.015	60	150	±2
NE547BN-100132	2 1/2	RED	0.027	55	150	±3
NE547BN-100133	3 1/2	ORANGE	0.040	50	150	±4.5
NE547BN-100134	4 1/2	YELLOW	0.054	50	150	±4.5
NE547BN-100135	5 1/2	GREEN	0.070	45	150	±4
NE547BN-100136	6 1/2	BLUE	0.086	45	150	±4
NE547BN-100137	7 1/2	VIOLET	0.100	40	100	±4
NE547BN-100138	8 1/2	GRAY	0.128[2]	40	100	±3.5
NE547BN-100139	9 1/2	WHITE	0.145[2]	40	100	±3.5
NE547BN-100140	10 1/2	BROWN	0.164[2]	40	100	±3.5

MC152

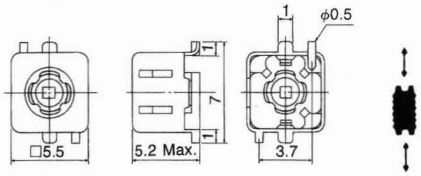
Close Wound
Frequency Range: 30-150MHz (with ferrite core)
Inductance Range: 29~142nH (without case)
27~94nH (with case)
Temperature Coefficient: 150±100ppm/°C (without case)
100±100ppm/°C (with case)

Unshielded



Unit: mm

Shielded



Unit: mm

Features

- Low profile SMT molded coil.
- Ideal for use in RF circuit for communication and car radio applications.
- Shielded case also available.

STANDARD COILS SELECTION GUIDE

(1) Alternate use of brass core will increase the usable frequency of any specific coil form, however inductance is reduced. These cores may also be substituted for ferrite as a means of lowering Q.

(2) Q measured by Q meter
(3) Inductance measured by HP-4191A at 100MHz for reference only.

TYPE MC152

Without Case TOKO Part Number[1]	Number of Turns	C Range**	Q[2]	Color Code	Inductance[3]
Ferrite Core					
E558CN-100020	1½	80.4pF±2%	90±20% (at 100MHz)	WHITE	32nH
E558CN-100021	2½	53.8pF±3%	110±20% (at 100MHz)	VIOLET	47nH
E558CN-100022	3½	37.0pF±3%	110±20% (at 100MHz)	ORANGE	68nH
E558CN-100023	4½	28.0pF±3%	115±20% (at 100MHz)	YELLOW	90nH
*E558CN-100024	5½	22.7pF±3%	120±20% (at 100MHz)	WHITE	112nH
*E558CN-100025	6½	17.8pF±3%	120±20% (at 100MHz)	BLUE	142nH
Air Core					
E558HN-100096	1½	86.9pF±10%	85±20% (at 100MHz)	WHITE	29nH
E558HN-100097	2½	61.2pF±10%	100±20% (at 100MHz)	VIOLET	41nH
E558HN-100098	3½	44.9pF±10%	105±20% (at 100MHz)	ORANGE	56nH
E558HN-100099	4½	34.6pF±10%	105±20% (at 100MHz)	YELLOW	73nH
E558HN-100100	5½	27.9pF±10%	120±20% (at 100MHz)	WHITE	91nH
E558HN-100101	6½	22.9pF±10%	120±20% (at 100MHz)	BLUE	111nH
Brass Core					
E558AN-100040	1½	88.6pF± 1%	52±20% (at 100MHz)	WHITE	29nH
E558AN-100041	2½	66.5pF± 3%	63±20% (at 100MHz)	VIOLET	38nH
E558AN-100042	3½	52.4pF± 3%	56±20% (at 100MHz)	ORANGE	48nH
E558AN-100043	4½	44.1pF± 2%	50±20% (at 100MHz)	YELLOW	57nH
E558AN-100044	5½	35.3pF± 2%	50±20% (at 100MHz)	WHITE	72nH
E558AN-100045	6½	30.0pF± 2%	50±20% (at 100MHz)	BLUE	84nH

* Minimum inductance values with core 2 turns above top of bobbin.
** C Range shows tolerance.

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STANDARD COILS SELECTION GUIDE

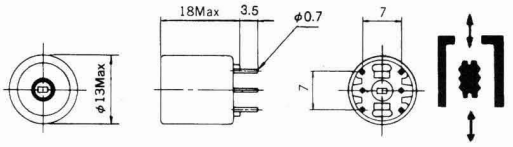
TYPE MC152 (cont'd)

With Case TOKO Part Number[1]	Number of Turns	C Range**	Q[2]	Color Code	Inductance[3]
Ferrite Core					
E558CNA-100032	1½	89.0pF±1.5%	63±20% (at 100MHz)	WHITE	28nH
E558CNA-100033	2½	64.2pF±2.0%	77±20% (at 100MHz)	VIOLET	39nH
E558CNA-100034	3½	48.2pF±2.0%	76±20% (at 100MHz)	ORANGE	53nH
E558CNA-100035	4½	37.9pF±2.0%	81±20% (at 100MHz)	YELLOW	67nH
*E558CNA-100036	5½	31.9pF±2.0%	86±20% (at 100MHz)	WHITE	79nH
*E558CNA-100037	6½	27.0pF±2.0%	80±20% (at 100MHz)	BLUE	94nH
Brass Core					
E558ANA-100050	1½	92.2pF±1.0%	58±20% (at 100MHz)	WHITE	27nH
E558ANA-100051	2½	73.6pF±2.0%	55±20% (at 100MHz)	VIOLET	34nH
E558ANA-100052	3½	59.1pF±2.0%	54±20% (at 100MHz)	ORANGE	43nH
E558ANA-100053	4½	48.7pF±2.0%	52±20% (at 100MHz)	YELLOW	52nH
E558ANA-100054	5½	41.6pF±2.0%	49±20% (at 100MHz)	WHITE	61nH
E558ANA-100055	6½	37.1pF±2.0%	47±20% (at 100MHz)	BLUE	68nH
Air Core					
E558HNA-100090	1½	90.7pF±10%	60±20% (at 100MHz)	WHITE	28nH
E558HNA-100091	2½	68.2pF±10%	70±20% (at 100MHz)	VIOLET	37nH
E558HNA-100092	3½	52.8pF±10%	80±20% (at 100MHz)	ORANGE	48nH
E558HNA-100093	4½	42.7pF±10%	80±20% (at 100MHz)	YELLOW	59nH
E558HNA-100094	5½	35.5pF±10%	86±20% (at 100MHz)	WHITE	71nH
E558HNA-100095	6½	30.3pF±10%	83±20% (at 100MHz)	BLUE	84nH

* Minimum inductance values with core 2 turns above top of bobbin.
** C Range shows tolerance.

12mm TYPE 12VXA

Frequency Range: 10-200kHz
Inductance Range: 1-68mH
Temperature Coefficient: 250ppm/°C



Unit: mm

Features

- Large capacity bobbin accommodates thicker wire sizes to provide higher inductance.
- The ability to tune from top to bottom adds flexibility to your design.

STANDARD PARTS SELECTION GUIDE

TYPE 12VXA (Variable)

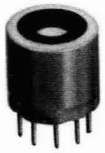
TOKO Part Number	Variable Inductance Range (mH)	Q (min.)	Measured Frequency (kHz)	Ref. Data (Typ.) DCR (OHM)	Ref. Data (Typ.) SRF (MHz)
719VXA-T1007Z	1.0±10%	20	252	2.9	1.44
719VXA-T1008Z	1.2±10%	20	252	3.3	1.23
719VXA-T1009Z	1.5±10%	20	252	3.6	1.10
719VXA-T1010Z	1.8±10%	20	252	5.3	1.02
719VXA-T1011Z	2.0±10%	20	252	5.7	0.90
719VXA-T1012Z	2.2±10%	20	252	6.3	0.88
719VXA-T1013Z	2.4±10%	20	252	6.4	0.83
719VXA-T1014Z	2.7±10%	20	252	6.7	0.78
719VXA-T1015Z	3.0±10%	20	252	7.0	0.75
719VXA-T1016Z	3.3±10%	20	252	7.3	0.74
719VXA-T1017Z	3.6±10%	20	252	7.5	0.73
719VXA-T1018Z	3.9±10%	20	252	7.7	0.62
719VXA-T1019Z	4.3±10%	20	252	7.9	0.61
719VXA-T1020Z	4.7±10%	20	252	10.3	0.61
719VXA-T1021Z	5.1±10%	20	252	10.8	0.60
719VXA-T1022Z	5.6±10%	20	252	11.3	0.58
719VXA-T1023Z	6.2±10%	20	252	11.5	0.56
719VXA-T1024Z	6.8±10%	20	252	12.5	0.55
719VXA-T1025Z	7.5±10%	20	252	13.0	0.54
719VXA-T1026Z	8.2±10%	20	252	14.0	0.53
719VXA-T1027Z	9.1±10%	20	252	15.0	0.51
719VXA-T1028Z	10.0±10%	45	79.6	22.8	0.44
719VXA-T1029Z	12.0±10%	45	79.6	35	0.41
719VXA-T1030Z	15.0±10%	45	79.6	40	0.39
719VXA-T1031Z	18.0±10%	45	79.6	47	0.36
719VXA-T1032Z	20.0±10%	45	79.6	51	0.34
719VXA-T1033Z	22.0±10%	45	79.6	53	0.32
719VXA-T1034Z	24.0±10%	45	79.6	55	0.31
719VXA-T1035Z	27.0±10%	45	79.6	57	0.31
719VXA-T1036Z	30.0±10%	45	79.6	70	0.28
719VXA-T1037Z	33.0±10%	45	79.6	78	0.27
719VXA-T1038Z	36.0±10%	45	79.6	95	0.26
719VXA-T1039Z	39.0±10%	45	79.6	100	0.25
719VXA-T1040Z	43.0±10%	45	79.6	108	0.24
719VXA-T1041Z	47.0±10%	45	79.6	112	0.22
719VXA-T1042Z	51.0±10%	45	79.6	115	0.21
719VXA-T1043Z	56.0±10%	45	79.6	140	0.21
719VXA-T1044Z	62.0±10%	45	79.6	150	0.20
719VXA-T1045Z	68.0±10%	45	79.6	160	0.20

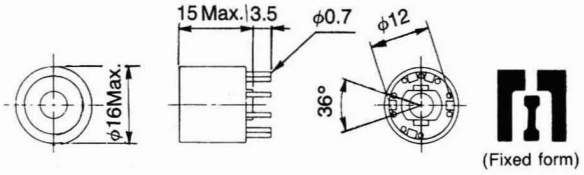
TYPE 12VXA (Fixed)

TOKO Part Number	Inductance (mH)	Turns Ratio: 3-4/5-4/3-2	1-3/4-6	3-4/1-6	Q (min.)	Test Frequency (kHz)
719VXA-A017A0	1		228/91		25	252
719VXA-A018YSU	.410	50.5/20/25		50.5/150.5	30	252

15mm TYPE 15RSL

Frequency Range: 10-200kHz
Inductance Range: 0.05-25mH
Temperature Coefficient: 1000ppm/°C max.





Unit: mm

Features

- The larger ferrite core produces high inductances and greatly improves saturation levels.
- Ideal for use in low frequency oscillator and drive trans.

STANDARD PARTS SELECTION GUIDE

TYPE 15RSL

TOKO Part Number	Inductance (mH)	Q (min.)	Test Frequency (kHz)
712RSL-1313	0.12±10%	55	796
712RSL-1253	0.33±10%	40	796
712RSL-1296	0.50±20%	30	796
712RSL-1193	0.88±10%	95	252
712RSL-1295	1.0 ±20%	40	252
712RSL-1306	2.1 ±10%	50	252
712RSL-1294	3.0 ±20%	60	252
712RSL-1293	4.0 ±20%	60	252
712RSL-1298	5.0 ±20%	60	252
712RSL-1297	10.0 ±20%	60	252
712RSL-1166	25.0 ±10%	150	79.6

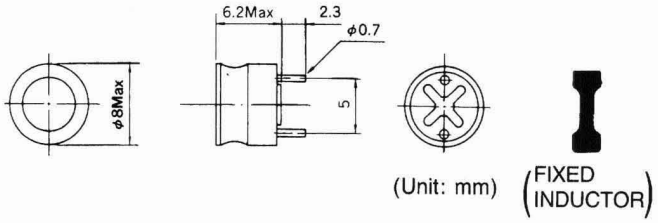
TOKO

CONTENTS

8RBS 112
8RHB2 113
8RHT2 114
8RDB 115
10RBM 116
10RB 117
10RBH 118
10RHB 119

TYPE 8RBS

Inductance Range: 0.1-15mH
Temperature Coefficient: 400ppm/°C, max.



Features

- Ideal as a choke coil and a trap coil for low profile equipment.
- Winding core is encapsulated in heat shrunk plastic housing, providing mechanical and environmental protection.

STANDARD PARTS SELECTION GUIDE

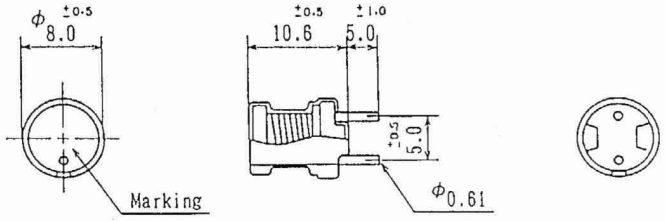
(1) Add tolerance code as indicated within the ( ) of the part number: J=±5%, K=±10%.
(2) Q and Inductance are measured by Q meter YHP-4343B or equivalent.
(3) The rated DC current is that which the inductance value decreases 10% by the excitation DC current, measured at 1KHz by universal bridge or equivalent.
(4) Self resonant frequency is for reference only.

TYPE 8RBS Low Profile

TOKO Part Number[1]	Inductance[2] (mH)	Q[2] (min.)	Test Frequency (kHz)	DC Resistance (Ω) max.	Rated DC Current[3] (mA) max.	Self Resonant Frequency[4] (MHz) min.
262LY-101K	0.10	60	796	2.0	200	6.1
262LY-121K	0.12	60	796	3.0	200	5.5
262LY-151K	0.15	60	796	3.0	200	5.0
262LY-181K	0.18	60	796	3.0	200	4.7
262LY-221K	0.22	60	796	3.0	150	4.5
262LY-271K	0.27	60	796	3.0	150	4.1
262LY-331K	0.33	60	796	4.0	150	3.8
262LY-391K	0.39	60	796	4.0	100	3.5
262LY-471K	0.47	60	796	5.0	100	3.2
262LY-561K	0.56	60	796	6.0	100	2.9
262LY-681K	0.68	60	796	6.0	100	2.7
262LY-821K	0.82	60	796	7.0	50	2.3
262LY-102K	1.0	80	252	9.0	50	2.1
262LY-122K	1.2	80	252	9.0	50	1.9
262LY-152K	1.5	80	252	11.0	50	1.8
262LY-182K	1.8	80	252	12.0	50	1.6
262LY-222K	2.2	80	252	14.0	50	1.5
262LY-272K	2.7	80	252	15.0	50	1.4
262LY-332K	3.3	80	252	25.0	40	0.9
262LY-392K	3.9	80	252	30.0	40	0.9
262LY-472K	4.7	80	252	32.0	40	0.8
262LY-562K	5.6	80	252	36.0	30	0.7
262LY-682K	6.8	80	252	40.0	30	0.7
262LY-822K	8.2	80	252	45.0	30	0.6
262LY-103( )	10.0	60	79.6	55.0	20	0.6
262LY-123( )	12.0	60	79.6	65.0	20	0.5
262LY-153( )	15.0	60	79.6	80.0	20	0.5

TYPE 8RHB2

Inductance Range: 1.0-1000µH
Temperature Coefficient: 400ppm/°C, max.



(Unit: mm)

Features

- Ideal as a choke coil for noise filtering and DC/DC convertor applications.

Note: Taped form is Type 8RHT2
(see complete specification on page 114).

STANDARD PARTS SELECTION GUIDE

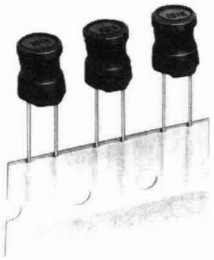
(1) The rated DC current is that which the inductance value decreases 10% by the excitation DC current, measured at 1KHz by Precision LCR meter 4284A (hp) or equivalent.
(2) The rated DC current which the part temperature rises 20°C by the excitation DC current from room temperature (20°).
(3) SRF is measured by Network Analyzer 3577A (hp), MS560J (Anritsu) or equivalent.
(4) DC Resistance is measured by Digital Multimeter TR6871 (Advantest) or equivalent.
(5) SRF is for reference only.

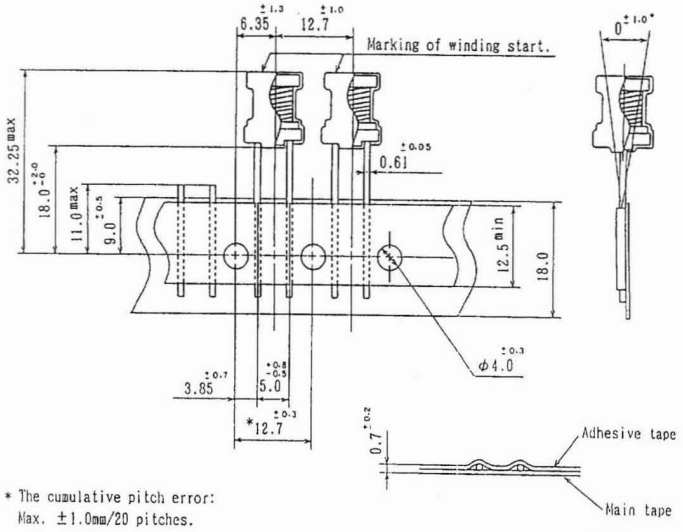
TYPE 8RHB2

TOKO Part Number	Inductance L (µH)	Test Frequency L (kHz)	DC Resistance (4) (Ω) max.	Rated DC Current (1) (A) max.	Rated DC Current (2) (A) max.	Self Resonant Frequency (3), (5) (MHz) min.
822LY-1R0M	1.0±20%	1	0.013	10	3.71	150
822LY-1R5M	1.5±20%	1	0.016	8.5	3.32	130
822LY-2R2M	2.2±20%	1	0.021	6.5	3.15	100
822LY-3R3M	3.3±20%	1	0.025	5.5	2.66	79
822LY-4R7M	4.7±20%	1	0.030	4.3	2.27	51
822LY-6R8M	6.8±20%	1	0.035	3.7	2.10	29
822LY-100K	10±10%	1	0.045	3.0	1.96	14
822LY-120K	12±10%	1	0.050	2.6	1.82	13
822LY-150K	15±10%	1	0.056	2.3	1.75	12
822LY-180K	18±10%	1	0.061	2.2	1.54	11
822LY-220K	22±10%	1	0.070	2.0	1.29	9.2
822LY-270K	27±10%	1	0.080	1.7	1.22	8.5
822LY-330K	33±10%	1	0.090	1.6	1.17	1.8
822LY-390K	39±10%	1	0.10	1.5	1.14	6.9
822LY-470K	47±10%	1	0.17	1.4	0.79	6.5
822LY-560K	56±10%	1	0.20	1.3	0.76	5.4
822LY-680K	68±10%	1	0.22	1.2	0.70	4.9
822LY-820K	82±10%	1	0.25	1.1	0.67	4.1
822LY-101K	100±10%	1	0.28	0.91	0.58	3.7
822LY-121K	120±10%	1	0.32	0.84	0.56	3.4
822LY-151K	150±10%	1	0.54	0.75	0.42	3.2
822LY-181K	180±10%	1	0.60	0.69	0.40	2.8
822LY-221K	220±10%	1	0.68	0.64	0.38	2.7
822LY-271K	270±10%	1	0.80	0.57	0.35	2.4
822LY-331K	330±10%	1	0.90	0.54	0.33	2.3
822LY-391K	390±10%	1	1.2	0.48	0.28	2.1
822LY-471K	470±10%	1	1.37	0.46	0.25	1.9
822LY-561K	560±10%	1	1.53	0.41	0.23	1.8
822LY-681K	680±10%	1	2.0	0.38	0.21	1.6
822LY-821K	820±10%	1	2.7	0.35	0.18	1.5
822LY-102K	1,000±10%	1	2.96	0.29	0.16	1.3

TYPE 8RHT2

Inductance Range: 1.0-1000µH
Temperature Coefficient: 400ppm/°C, max.





* The cumulative pitch error:
Max. ±1.0mm/20 pitches.

Unit: mm

Features

- Ideal as a choke coil for noise filtering and DC/DC convertor applications.
- Tape and reel for automated assembly.

STANDARD PARTS SELECTION GUIDE

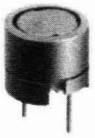
(1) The rated DC current is that which the inductance value decreases 10% by the excitation DC current, measured at 1KHz by Precision LCR meter 4284A (hp) or equivalent.
(2) The rated DC current which the part temperature rises 20°C by the excitation DC current from room temperature (20°).
(3) SRF is measured by Network Analyzer 3577A (hp), MS560J (Anritsu) or equivalent.
(4) DC Resistance is measured by Digital Multimeter TR6871 (Advantest) or equivalent.
(5) SRF is for reference only.

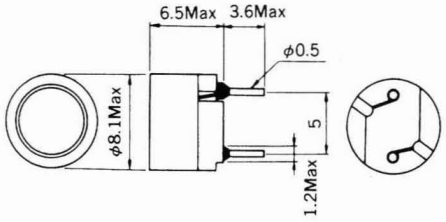
TYPE 8RHT2

TOKO Part Number	Inductance L (µH)	Test Frequency L (kHz)	DC Resistance (4) (Ω) max.	Rated DC Current (1) (A) max.	Rated DC Current (2) (A) max.	Self Resonant Frequency (3), (5) (MHz) min.
A823LY-1R0M=R	1.0±20%	1	0.013	10	3.71	150
A823LY-1R5M=R	1.5±20%	1	0.016	8.5	3.32	130
A823LY-2R2M=R	2.2±20%	1	0.021	6.5	3.15	100
A823LY-3R3M=R	3.3±20%	1	0.025	5.5	2.66	79
A823LY-4R7M=R	4.7±20%	1	0.030	4.3	2.27	51
A823LY-6R8M=R	6.8±20%	1	0.035	3.7	2.10	29
A823LY-100K=R	10±10%	1	0.045	3.0	1.96	14
A823LY-120K=R	12±10%	1	0.050	2.6	1.82	13
A823LY-150K=R	15±10%	1	0.056	2.3	1.75	12
A823LY-180K=R	18±10%	1	0.061	2.2	1.54	11
A823LY-220K=R	22±10%	1	0.070	2.0	1.29	9.2
A823LY-270K=R	27±10%	1	0.080	1.7	1.22	8.5
A823LY-330K=R	33±10%	1	0.090	1.6	1.17	1.8
A823LY-390K=R	39±10%	1	0.10	1.5	1.14	6.9
A823LY-470K=R	47±10%	1	0.16	1.4	0.79	6.5
A823LY-560K=R	56±10%	1	0.18	1.3	0.76	5.4
A823LY-680K=R	68±10%	1	0.21	1.2	0.70	4.9
A823LY-820K=R	82±10%	1	0.23	1.1	0.67	4.1
A823LY-101K=R	100±10%	1	0.28	0.91	0.58	3.7
A823LY-121K=R	120±10%	1	0.32	0.84	0.56	3.4
A823LY-151K=R	150±10%	1	0.37	0.75	0.42	3.2
A823LY-181K=R	180±10%	1	0.58	0.69	0.40	2.8
A823LY-221K=R	220±10%	1	0.65	0.64	0.38	2.7
A823LY-271K=R	270±10%	1	0.75	0.57	0.35	2.4
A823LY-331K=R	330±10%	1	0.85	0.54	0.33	2.3
A823LY-391K=R	390±10%	1	1.0	0.48	0.28	2.1
A823LY-471K=R	470±10%	1	1.1	0.46	0.25	1.9
A823LY-561K=R	560±10%	1	1.4	0.41	0.23	1.8
A823LY-681K=R	680±10%	1	1.6	0.38	0.21	1.6
A823LY-821K=R	820±10%	1	1.8	0.35	0.18	1.5
A823LY-102K=R	1,000±10%	1	2.9	0.29	0.16	1.3

TYPE 8RDB

Inductance Range: 4.7-15000µH
Operating Temperature: –25°C-85°C
Temperature Coefficient: 1000ppm/°C, max.





(Fixed Inductor)

Unit: mm

Features

- Ideal as a choke coil for filtering applications.
- Has a low profile and high saturation flux density ferrite core, which makes this model ideal for EMI filtering in high current power supplies (used in computers, TV, etc.).

STANDARD PARTS SELECTION GUIDE

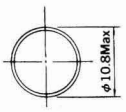
(1) The rated DC current is that which the inductance value decreases 10% by the excitation DC current, measured at 1KHz by universal bridge or equivalent.

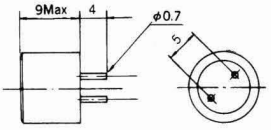
TYPE 8RDB

TOKO Part Number	Inductance Range (µH)	Inductance Test Frequency	Qu (min.)	Q Test Frequency	DC Resistance mΩ (Max.)	Rated DC Current(1) (A)	Self Resonant Frequency MHz (Min.)
8RDB-100M	10±20%	1 KHz	30	100 KHz	36	1.25	47
8RDB-150M	15±20%	1 KHz	30	100 KHz	39	0.91	27
8RDB-220M	22±20%	1 KHz	30	100 KHz	51	0.82	12
8RDB-330M	33±20%	1 KHz	30	100 KHz	62	0.51	8.2
8RDB-470M	47±20%	1 KHz	30	100 KHz	75	0.47	7.5
8RDB-680M	68±20%	1 KHz	30	100 KHz	120	0.33	6.2
8RDB-101M	100±20%	1 KHz	30	100 KHz	150	0.27	5.6
8RDB-151K	150±10%	1 KHz	30	100 KHz	240	0.24	4.7
8RDB-221K	220±10%	1 KHz	30	100 KHz	390	0.22	3.6
8RDB-331K	330±10%	1 KHz	30	100 KHz	470	0.18	2.7
8RDB-471K	470±10%	1 KHz	30	100 KHz	820	0.15	2.2

TYPE 10RBM Low Profile, High Inductance

Frequency Range: 10-200KHz
Inductance Range: 1-47mH
Temperature Coefficient: 1000ppm/°C, max.





(Fixed Inductor)

Unit: mm

Features

- Ideal as a choke coil for noise filtering.
- It is suitable for use in audio processing circuits for low, high and bandpass filtering.

STANDARD PARTS SELECTION GUIDE

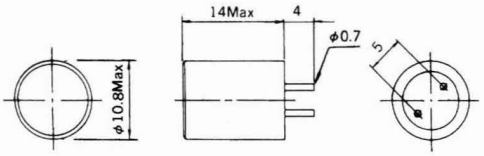
(1) Add tolerance code as indicated within the ( ) of the part number: J=±5% K=±10%.
(2) L measured at 1KHz by universal bridge or equivalent.
(3) Q measured at 50KHz by Q meter YHP-4343B or equivalent.
(4) The rated DC current is that which the inductance value decreases 10% by the excitation DC current, measured at 1KHz by universal bridge of equivalent.
(5) Self resonant frequency is for reference only.

TYPE 10RBM Low Profile, High Inductance

TOKO Part Number[1]	Inductance[2] (mH)	Q[3] (min.)	DC Resistance (Ω) max.	Rated DC Current[4] (mA) max.	Self Resonant Frequency[5] (MHz) min.
265LY-102( )	1.0	40	4.7	57	1.6
265LY-122( )	1.2	40	5.1	50	1.5
265LY-152( )	1.5	45	5.9	46	1.3
265LY-182( )	1.8	45	6.6	41	1.3
265LY-222( )	2.2	50	7.8	37	1.1
265LY-272( )	2.7	50	9.0	34	1.0
265LY-332( )	3.3	50	10.0	30	1.0
265LY-392( )	3.9	50	11.5	28	0.9
265LY-472( )	4.7	50	12.6	25	0.8
265LY-562( )	5.6	50	17.2	23	0.7
265LY-682( )	6.8	50	19.0	20	0.7
265LY-882( )	8.2	60	22.0	18	0.6
265LY-103( )	10.0	60	25.0	15	0.5
265LY-123( )	12.0	60	28.0	14	0.5
265LY-153( )	15.0	60	33.0	12	0.4
265LY-183( )	18.0	60	42.0	11	0.3
265LY-223( )	22.0	70	48.0	10	0.3
265LY-273( )	27.0	70	56.0	10	0.3
265LY-333( )	33.0	70	64.0	9	0.2
265LY-393( )	39.0	70	72.0	8	0.2
265LY-473( )	47.0	70	82.0	8	0.2

TYPE 10RB Fixed Inductor

Frequency Range: 10-200KHz
Inductance Range: 1-120mH
Temperature Coefficient: 1000ppm/°C, max.



Unit: mm

(Fixed Inductor)

Features

- Ideal as a choke coil for noise filtering.
- Suitable for use in audio processing circuits for low, high and bandpass filtering.

STANDARD PARTS SELECTION GUIDE

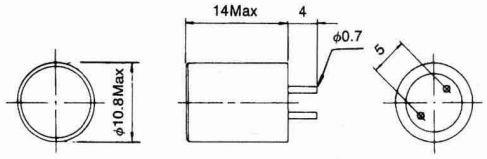
(1) Add tolerance code as indicated within the ( ) of the part number: J=±5%, K=±10%.
(2) L measured at 1KHz by universal bridge or equivalent.
(3) Q measured at 50KHz by Q meter YHP-4343B or equivalent.
(4) The rated DC current is that which the inductance value decreases 10% by the excitation DC current, measured at 1KHz by universal bridge of equivalent.
(5) Self resonant frequency is for reference only.

TYPE 10RB

TOKO Part Number[1]	Inductance[2] (mH)	Q[3] (min.)	DC Resistance (Ω) max.	Rated DC Current[4] (mA) max.	Self Resonant Frequency[5] (MHz) min.
181LY-102( )	1.0	70	3.4	90	0.77
181LY-122( )	1.2	70	3.7	75	0.70
181LY-152( )	1.5	70	4.0	70	0.64
181LY-182( )	1.8	70	4.5	65	0.57
181LY-222( )	2.2	70	5.2	60	0.51
181LY-272( )	2.7	70	5.8	55	0.48
181LY-332( )	3.3	100	6.1	50	0.44
181LY-392( )	3.9	100	7.2	45	0.41
181LY-472( )	4.7	100	7.5	40	0.38
181LY-562( )	5.6	100	8.4	40	0.35
181LY-682( )	6.8	100	9.7	35	0.32
181LY-822( )	8.2	100	10.4	30	0.28
181LY-103( )	10.0	100	12.1	25	0.25
181LY-123( )	12.0	100	13.0	25	0.22
181LY-153( )	15.0	100	15.0	20	0.22
181LY-183( )	18.0	100	17.0	22	0.19
181LY-223( )	22.0	100	19.5	21	0.19
181LY-273( )	27.0	100	22.0	18	0.16
181LY-333( )	33.0	100	26.0	17	0.16
181LY-363( )	36.0	100	27.0	16	0.20
181LY-393( )	39.0	100	45.0	15	0.12
181LY-473( )	47.0	100	52.0	13	0.12
181LY-563( )	56.0	100	58.0	12	0.12
181LY-683( )	68.0	100	67.0	11	0.09
181LY-823( )	82.0	100	71.0	10	0.09
181LY-104( )	100.0	100	82.0	9	0.09
181LY-124( )	120.0	100	97.0	8	0.08

TYPE 10RBH High Inductance

Frequency Range: 10-200KHz
Inductance Range: 150mH-1.5H
Temperature Coefficient: 1500ppm/°C, max.



Unit: mm

(Fixed Inductor)

Features

- Ideal as a choke coil for noise filtering.
- Suitable for use in audio processing circuits for low, high and bandpass filtering.

STANDARD PARTS SELECTION GUIDE

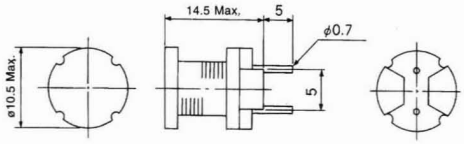
(1) Add tolerance code as indicated within the ( ) of the part number: K=±10%.
(2) L measured at 1KHz by universal bridge or equivalent.
(3) Q measured at 50KHz by Q meter YHP-4343B or equivalent.
(4) The rated DC current is that which the inductance value decreases 10% by the excitation DC current, measured at 1KHz by universal bridge of equivalent.
(5) Self resonant frequency is for reference only.

TYPE 10RBH High Inductance

TOKO Part Number[1]	Inductance[2] (H)	Q[3] (min.)	Test Frequency (KHz)	DC Resistance (Ω) max.	Rated DC Current[4] (mA) max.	Self Resonant Frequency[5] (MHz) min.
239LY-154( )	0.15	90	25.2	75	3.6	87
239LY-184( )	0.18	90	25.2	85	3.4	84
239LY-224( )	0.22	90	25.2	95	3.2	74
239LY-274( )	0.27	90	25.2	105	3.1	68
239LY-334( )	0.33	80	25.2	125	3.0	61
239LY-394( )	0.39	80	25.2	140	2.5	59
239LY-474( )	0.47	80	25.2	190	2.1	52
239LY-564( )	0.56	80	25.2	215	2.0	50
239LY-684( )	0.68	60	25.2	250	2.0	45
239LY-824( )	0.82	60	16.0	265	1.8	31
239LY-105( )	1.00	60	16.0	295	1.7	29
239LY-125( )	1.20	50	16.0	385	1.5	26
239LY-155( )	1.50	50	16.0	435	1.2	25

TYPE 10RHB

Inductance Range: 10µH-3.9mH
Temperature Coefficient: 400ppm/°C max



Unit: mm

(Fixed Inductor)

Features

- Open magnetic circuit construction.
- High rated current.
- 5mm-pitch fixed inductor.
- Ideal for use in chokes for high current circuits in all types of electronic instruments.

STANDARD PARTS SELECTION GUIDE

TYPE 10RHB with Heat Shrink Covering

TOKO Part Number	Inductance L (µH)	Qu (min.)	Test Frequency of L, Qu (MHz)	DC Resistance (Ω) (max.)	Rated DC Current (A) max.	Self Resonant Frequency (MHz) min.
R635LY-100K	10±10%	50	2.52	0.052	3.8	44
R635LY-120K	12±10%	50	2.52	0.059	3.5	33
R635LY-150K	15±10%	50	2.52	0.065	3.1	25
R635LY-180K	18±10%	50	2.52	0.071	2.8	16
R635LY-220K	22±10%	50	2.52	0.076	2.5	12
R635LY-270K	27±10%	50	2.52	0.082	2.3	8.3
R635LY-330K	33±10%	50	2.52	0.086	2.2	5.9
R635LY-390K	39±10%	40	2.52	0.095	2.0	4.9
R635LY-470K	47±10%	30	2.52	0.11	1.8	4.1
R635LY-560K	56±10%	30	2.52	0.12	1.7	4.0
R635LY-680K	68±10%	30	2.52	0.13	1.5	3.9
R635LY-820K	82±10%	30	2.52	0.14	1.4	3.6
R635LY-101K	100±10%	40	0.796	0.18	1.1	2.8
R635LY-121K	120±10%	40	0.796	0.19	1.0	2.6
R635LY-151K	150±10%	40	0.796	0.22	0.98	2.2
R635LY-181K	180±10%	30	0.796	0.25	0.91	2.1
R635LY-221K	220±10%	30	0.796	0.28	0.82	1.9
R635LY-271K	270±10%	30	0.796	0.46	0.75	1.6
R635LY-331K	330±10%	30	0.796	0.50	0.66	1.5
R635LY-391K	390±10%	30	0.796	0.56	0.62	1.4
R635LY-471K	470±10%	20	0.796	0.62	0.58	1.3
R635LY-561K	560±10%	20	0.796	0.69	0.54	1.2
R635LY-681K	680±10%	20	0.796	0.77	0.48	1.1
R635LY-821K	820±10%	20	0.796	0.86	0.45	1.0
R635LY-102K	1000±10%	50	0.252	1.6	0.38	0.87
R635LY-122K	1200±10%	50	0.252	1.8	0.34	0.83
R635LY-152K	1500±10%	40	0.252	2.1	0.31	0.77
R635LY-182K	1800±10%	30	0.252	2.3	0.28	0.71
R635LY-222K	2200±10%	30	0.252	2.6	0.26	0.66
R635LY-272K	2700±10%	30	0.252	3.0	0.24	0.61
R635LY-332K	3300±10%	30	0.252	4.0	0.21	0.52
R635LY-392K	3900±10%	30	0.252	4.5	0.19	0.48

continued on next page

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TYPE 10RHB without Heat Shrink Covering (cont'd)

TOKO Part Number	Inductance L (μH)	Qu (min.)	Test Frequency of L, Qu (MHz)	DC Resistance (Ω) (max.)	Rated DC Current (A) max.	Self Resonant Frequency (MHz) min.
R635LYF-100K	10±10%	50	2.52	0.052	3.8	44
R635LYF-120K	12±10%	50	2.52	0.059	3.5	33
R635LYF-150K	15±10%	50	2.52	0.065	3.1	25
R635LYF-180K	18±10%	50	2.52	0.071	2.8	16
R635LYF-220K	22±10%	50	2.52	0.076	2.5	12
R635LYF-270K	27±10%	50	2.52	0.082	2.3	8.3
R635LYF-330K	33±10%	50	2.52	0.086	2.2	5.9
R635LYF-390K	39±10%	40	2.52	0.095	2.0	4.9
R635LYF-470K	47±10%	30	2.52	0.12	1.8	4.1
R635LYF-560K	56±10%	30	2.52	0.12	1.7	4.0
R635LYF-680K	68±10%	30	2.52	0.13	1.5	3.9
R635LYF-820K	82±10%	30	2.52	0.14	1.4	3.6
R635LYF-101K	100±10%	40	0.796	0.18	1.1	2.8
R635LYF-121K	120±10%	40	0.796	0.19	1.0	2.6
R635LYF-151K	150±10%	40	0.796	0.22	0.98	2.2
R635LYF-181K	180±10%	30	0.796	0.25	0.91	2.1
R635LYF-221K	220±10%	30	0.796	0.28	0.82	1.9
R635LYF-271K	270±10%	30	0.796	0.46	0.75	1.6
R635LYF-331K	330±10%	30	0.796	0.50	0.66	1.5
R635LYF-391K	390±10%	30	0.796	0.56	0.62	1.4
R635LYF-471K	470±10%	20	0.796	0.62	0.58	1.3
R635LYF-561K	560±10%	20	0.796	0.69	0.54	1.2
R635LYF-681K	680±10%	20	0.796	0.77	0.48	1.1
R635LYF-821K	820±10%	20	0.796	0.86	0.45	1.0
R635LYF-102K	1000±10%	50	0.252	1.6	0.38	0.87
R635LYF-122K	1200±10%	50	0.252	1.8	0.34	0.83
R635LYF-152K	1500±10%	40	0.252	2.1	0.31	0.77
R635LYF-182K	1800±10%	30	0.252	2.3	0.28	0.71
R635LYF-222K	2200±10%	30	0.252	2.6	0.26	0.66
R635LYF-272K	2700±10%	30	0.252	3.0	0.24	0.61
R635LYF-332K	3300±10%	30	0.252	4.0	0.21	0.52
R635LYF-392K	3900±10%	30	0.252	4.5	0.19	0.48

AM RF Tuning Unit Coils

CONTENTS

AM RF Tuning Unit Coils

RBW07VW 122

RBW07VC

RBQ07VB

RBQ07VA

RBT07VC

RBT07VS

RBW 123

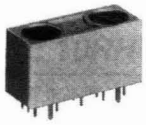
RBT

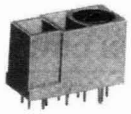
RBQ Series

TYPE
RBW07VB RBQ07VA
RBW07VC RBT07VC
RBQ07VB RBT07VS

AM RF Tuning Unit Coils

TOKO


RBW07VB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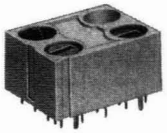
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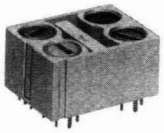
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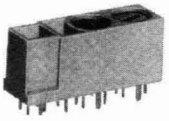
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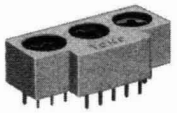
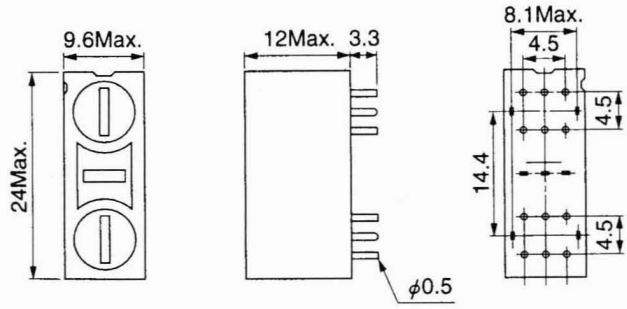

RBT07VS

Dimensions (Unit: mm)

RBW07VB



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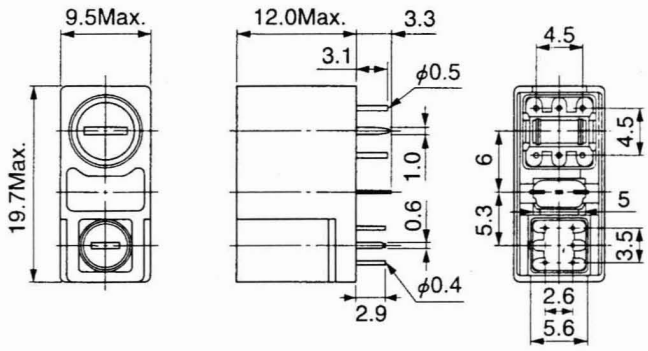

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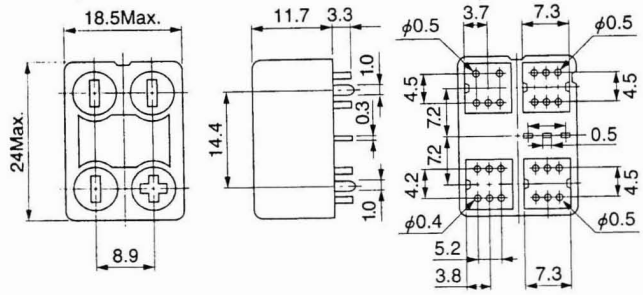

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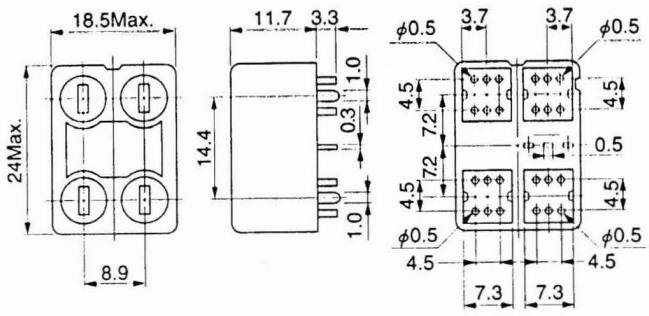

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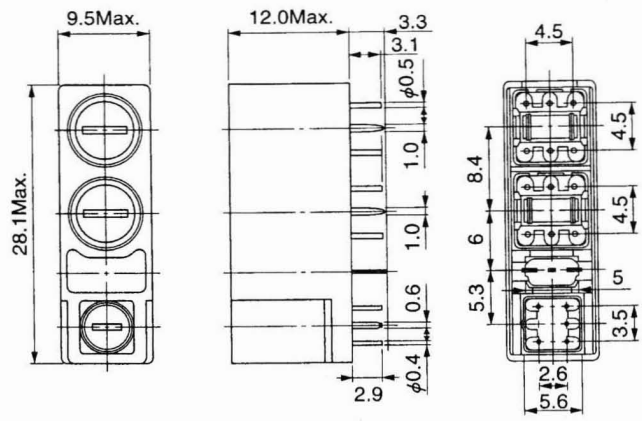

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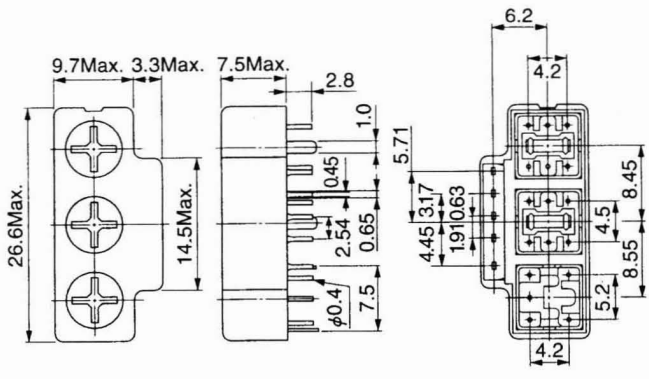
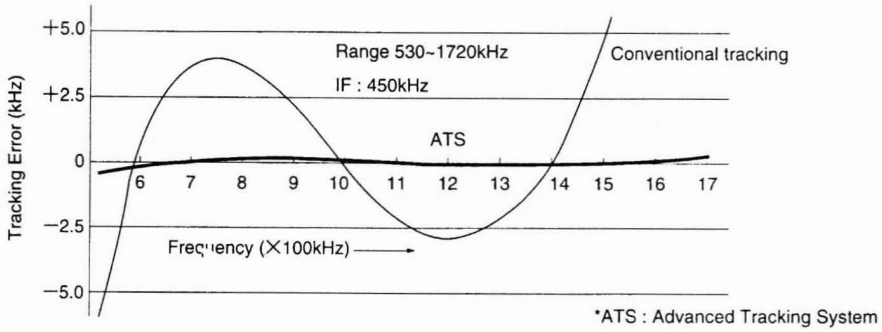


ATS Curves



*ATS : Advanced Tracking System

Features

RBW07V
- All-in-one RF coil, local oscillator coil, VCD, and padding capacitor.
- RF can be pretuned to require zero adjustment.
- Compact

RBT07V
- Coil block includes antenna, RF and oscillator coils, with 2 sets of paired variable capacitance diodes.
- Tracking error pre-corrected requires no adjustment.
- Oscillator coil will take up to 3 internal chip capacitors (including padding capacitors).

RBQ07V
- MW, LW 2-band antenna coil, oscillator coil, VCD, padding capacitor, and stray capacitor all-in-one.
- MW and LW band RF can be preset to require no adjustment.
- LW oscillator uses newly developed 7EQ type, which will take 4 internal capacitors. Freedom of connection greatly improved.

SPECIFICATIONS

Function \ Use Type	RF Tuning Units								
	RBW07VB	RBW07VC	RBT07VC		RBQ07VB		RBQ07VA		RBT07VS
ANT	7P	7P	7P	7PA	7P	7PA	7P	7PA	7PS
RF	–	–	–	–	–	–	–	–	7PS
OSC	7P	5VLS	5VLS		7P	7PD	7P	7P	7PB
Padding Cap.	430~490pF	270~390pF	270~390pF		390~490pF	100~490pF	390~490pF	100~490pF	430~490pF
VCD**	KV1260	KV1520	KV1280		KV1260	–	KV1260	–	KV1238M
Standard V Range	1~8V	0.7~8V	0.7~8V		1~8V	–	1~8V	–	1~8V
			MW band	LW band	MW band	LW band	MW band	LW band	

** TOKO: Variable Capacitance Diodes

TOKO

LC Filters for Multimedia
(Surface Mount and PIN Types)
LC Filters for High Definition
LC Filters for RF Equipment

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7KLT 150
DUP3 152

TYPE FSS, FSW, FST, FS25*

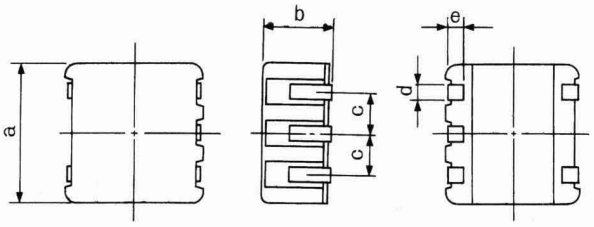
Frequency Range:500 KHz - 15 MHz
Low pass filter, Bandpass pass filters, Delay line, LC trap.

S Type

25S Type

W and T Type

25W, 25T Type



Unit: mm

Features

- Low profile of only 3.0mm.
- Lightweight
- Resin-sealed construction makes it highly reliable and highly suitable for surface mounting.
- Useful in the design of a wide range of filters.

Applications

- Ideal for video cameras, electronic still cameras and other portable film equipment.

	FS25S	FS25W, T	FSS	FSW
a	3.6	5.1	3.8	5.1
b	2.5	2.5	3.0	3.0
c	1.15	1.6	1.15	1.6
d	0.6	0.7	0.6	0.7
e	0.5	0.6	0.5	0.6

STANDARD FILTER SELECTION GUIDE

Low Pass Filters

TOKO Part Number	Type	Cutoff Frequency (MHz)	Trap Frequency (MHz)	Group Delay (ns, typ.)	I/O Impedance (Ω)	Notes
628LIN-1168	FSS	1.2	4.43	240	620/620	Nyquist LPF for Digital Comm.
628LIN-1013	FSS	2.0	5.00	100	1K/1K	Chroma LPF
630LMN-1170	FST	3.6	4.80	290	1K/1K	Luma LPF
630LMN-1031	FST	5.0	7.16	200	1K/1K	D/A Converter Post LPF
630LMN-1005	FST	5.0	14.30	250	1K/1K	D/A Converter Post LPF

Delay Lines

TOKO Part Number	Type	Cutoff Frequency (MHz)	Trap Frequency (MHz)	Group Delay (ns, typ.)	I/O Impedance (Ω)	Notes
630LMN-1297	FST	5.0	-	400	1K/1K	Encoder IC Y-D.L. (Motorola)
629LKN-1018	FSW	6.0	-	180	1K/1K	Encoder IC Y-D.L. (Sony)

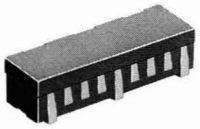
Bandpass Filters

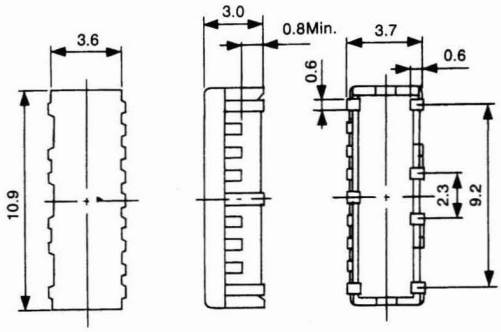
TOKO Part Number	Type	Center Frequency (MHz)	Bandwidth @ 3dB (MHz)	Group Delay (ns, typ.)	I/O Impedance (Ω)	Notes
628BIN-1292	FSS	3.58	2.6	300	1K/1K	Encoder C-BPF (NTSC)
628BIN-1014	FSS	3.58	2.5	170	1K/1K	Encoder C-BPF (NTSC)
628BIN-1010	FSS	3.58	2.0	200	1K/1K	Encoder C-BPF (NTSC)
628BIN-1293	FSS	4.43	3.0	300	1K/1K	Encoder C-BPF (PAL)
628BIN-1015	FSS	4.43	2.5	170	1K/1K	Encoder C-BPF (PAL)

* FS25, FS25W, FS25T please contact Toko for standard parts specifications and availability.

TYPE FSVT

Frequency Range: 1~15MHz
Bandpass filters





Unit: mm

Features

- Compact, with small footprint: 3.6 x 10.9mm (57% the size of the 4FT type)
- Can make up to 3 pole (9th order) Bandpass filter for high performance.
- Resin casing for high environmental performance.

Applications

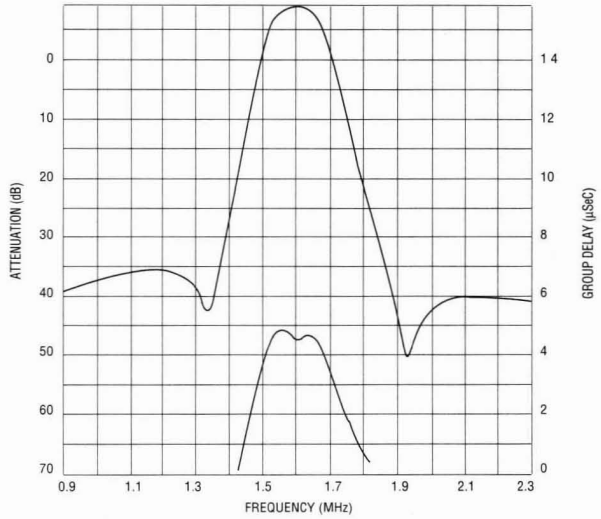
- For camcorder audio
- For mobile communications equipment 2nd IF

STANDARD FILTER SELECTION GUIDE

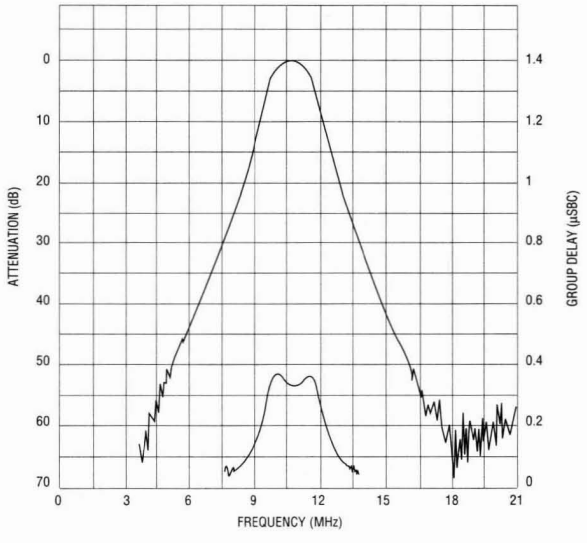
TYPE FSVT 3 pole Band Pass Filters

TOKO Part Number	Center Frequency	3dB Bandwidth	I/O Impedance
684BLN-1001	1.5 MHz	200 KHz min	1KΩ/1KΩ
684BLN-1002	1.7 MHz	100 KHz min	1KΩ/1KΩ
684BLN-1008	1.6 MHz	100 KHz min	330Ω/330Ω
684BKN-1014	10.7 MHz	1.0 MHz min	330Ω/330Ω

Typical Data
Part Number 684BLN-1008
1.6MHz BPF



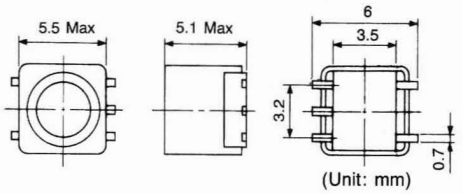
Typical Data
Part Number 684BKN-1014
10.7MHz BPF



TYPE 4FNS, 4FNW, 4FNT

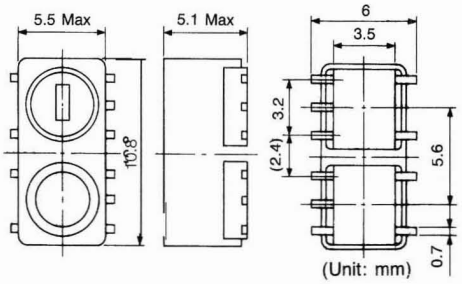
Freqency Range: 100KHz~15MHz

4FNS



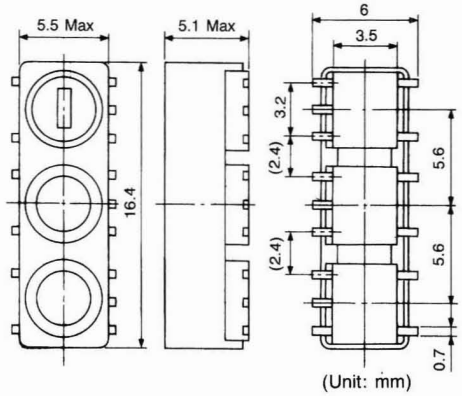
(Unit: mm)

4FNW



(Unit: mm)

4FNT



(Unit: mm)

STANDARD FILTER SELECTION GUIDE

TYPE 4FN & 4F Series

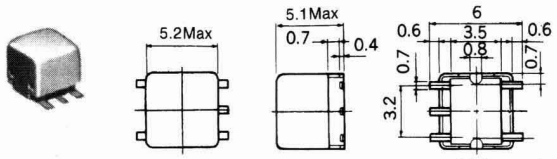
TOKO Part Number	Type	Bandwidth (MHz) -3db	I/O Impedance (Ω)	Performance[1]	Group Delay
G381EAI-1948DFD	4FNS	8	1000	EQT or D.L.	50ns (7MHz)
G354EAH-2450DFE	4FUS	6	1500	EQT or D.L.	70ns (6MHz)
H354LAI-2192DJD	4FUS	5	1000	LPF	120ns (3MHz)
G355ENK-1979LAD	4FW	6	1000	EQT or D.L.	150ns (6MHz)
H355LSK-2903LMD	4FW	3	1000	LPF	200ns (2.8MHz)
H355LNK-1236MGD	4FW	5.8	1000	D.L.	200ns (4MHz)
H355LNK-1569MOD	4FW	3.5	1000	D.L.	250ns (3.5MHz)
H356LNM-2557TTD	4FT	5.5	1000	D.L.	300ns (5MHz)
G356ENM-2587TCD	4FT	6	1000	EQT or D.L.	300ns (5MHz)
H355LNK-1714LGD	4FW	3	1000	D.L.	350ns (2MHz)
G383ENM-2688TCD	4FNT	6	1000	EQT or D.L.	350ns (4MHz)
H356LNM-1420VID	4FT	3.5	1000	D.L.	400ns (3MHz)
H356LSM-2592VLD	4FT	3.2	1000	D.L.	450ns (3MHz)
H356LSM-2476VLD	4FT	3	1000	D.L.	500ns (3MHz)
H356LAM-1281TWD	4FT	3.3	1000	LPF	500ns (2.5MHz)
G383ENL-2617TCD	4FNT	3.5	1000	EQT or D.L.	500ns (2.5MHz)
H356LNM-2313VID	4FT	3.2	1000	LPF	600ns (2MHz)

(1): EQT: Equalizing transformer LPF: Low Pass Filter D.L.: Delay Line

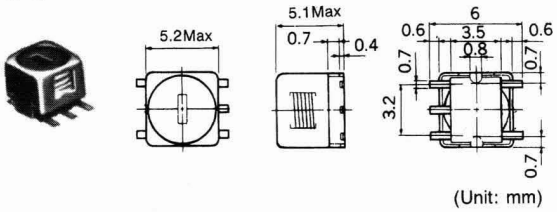
4F Series, Single (4FUS, 4FS), Double (4FW), or Triple (4FT)

For Reflow Soldering
Frequency Range: 0.1-15MHz -

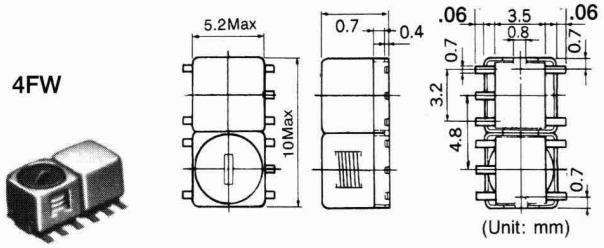
4FUS: (without adjustable hole)



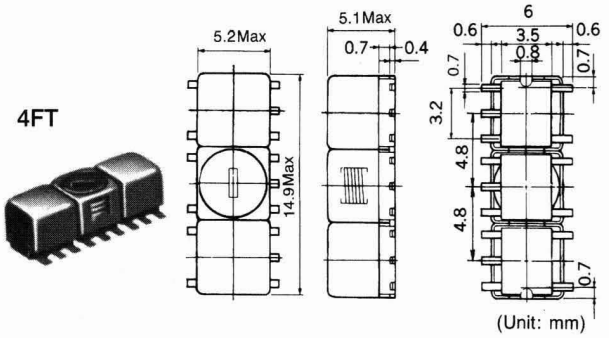
4FS



4FW



4FT



Features

- Ultra-compact LC block filters based on 4mm square coil units.
- Basic units will take up to 2 built-in capacitors.
- Adjustable and non-adjustable types available.
- Up to three units may be used in combination.
- Highly adaptable suitable for highpass, lowpass, and bandpass filters, delay lines, equalizers, etc.
- Shield case minimizes interference with other components, allowing high-density layout.
- Suitable for surface mounting (reflow soldering) on PCBs.

Applications

- Developed for use in the increasingly compact world of video equipment.

STANDARD FILTER SELECTION GUIDE

TYPE 4F Series

TOKO Part Number	Type	Bandwidth (MHz) -3db	I/O Impedance (Ω)	Notes
H354BAI-1425DAD	4FUS	2.9/4.3	1000	3.58MHz BPF(D-Tune)
H354BAI-1748DAD	4FUS	3.7/5.2	1000	4.43MHz BPF(D-Tune)
H355BSJ-1157KP	4FW	2.4/4.5	1000	3.58MHz BPF(W/Trap)
H355BSJ-2990KDD	4FW	3.4/5.4	1000	4.43MHz BPF(W/Trap)

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LPF

TYPE 4FS

No.	Cut-Off Freq. (MHz)	Group Delay Time (ns)	Trap Freq. (MHz)	TOKO Part No.
1	0.5	520	3.58	H353LCI-1844
2	0.7	320	3.58	H353LCI-1750
3	0.8	255	3.58	H353LCI-4691
4	0.9	240	3.58	H353LCI-1759
5	1.0	250	3.58	H353LCI-4580
6	1.3	180	3.58	H353LCI-5087
7	2.5	100	7.16	H353LCI-4536
8	1.0	220		H353LCI-2077
9	1.2	250		H353LCI-3532
10	1.5	200		TH353LCI-4073

TYPE 4FUS

No.	Cut-Off Freq. (MHz)	Group Delay Time (ns)	Trap Freq. (MHz)	TOKO Part No.
1	1.1	300	3.58	H354LAI-2258
2	1.2	200	3.58	H354LBI-2542
3	0.5	450	4.43	H354LAI-3056
4	0.7	360	4.43	H354LCI-2913
5	1.0	260	4.43	H354LNI-2882
6	1.2	280	4.43	H354LAI-4682
7	1.3	250	4.43	H354LAI-4968
8	1.0	330	7.16	H354LBI-3357
9	1.5	200	7.16	H354LBI-3284
10	2.8	120	10.70	H354LAI-4435
11	1.2	260		H354LAI-4945
12	1.3	400		H354LAI-4703
13	1.5	200		H354LAI-4626
14	2.0	150		H354LAI-4679
15	2.5	140		H354LAI-4736
16	3.0	100		H354LAI-3358
17	3.5	100		H354LAI-4875
18	4.5	120		G354LAI-2997
19	5.0	80		H354LAI-3158
20	5.5	60		H354LAI-4402
21	6.0	70		H354LAI-3159
22	7.0	50		G354LAI-3453
23	8.0	70		H354LAI-1226
24	9.0	30		G354LAI-3451

TYPE 4FW

No.	Cut-Off Freq. (MHz)	Group Delay Time (ns)	Trap Freq. (MHz)	TOKO Part No.
1	0.7	780	3.58	H355LNJ-3590
2	0.8	460	3.58	H355LNK-4169
3	0.9	600	3.58	H355LNK-1682
4	1.0	360	3.58	H355LSK-4141
5	1.2	480	3.58	H355LSK-4139
6	1.3	260	3.58	H355LSK-2517
7	1.5	300	3.58	H355LSK-1791
8	1.8	340	3.58	H355LSK-3909
9	2.0	280	3.58	H355LSJ-2840
10	0.7	750	4.43	H355LNK-2154
11	0.9	850	4.43	H355LNK-2139
12	1.0	630	4.43	H355LNK-2141
13	1.3	670	4.43	H355LNK-2420
14	1.5	225	4.43	H355LNJ-1240
15	2.2	200	4.43	H355LSJ-4328
16	2.5	200	4.43	H355LSJ-4247
17	2.8	200	4.43	H355LSK-4077
18	1.5	220	7.16	TH355LSK-4681
19	1.8	220	7.16	H355LSK-4075
20	2.5	120	7.16	H355LDJ-3074
21	2.8	210	7.16	H355LSK-2903
22	3.0	200	7.16	H355LSJ-3938
23	3.5	250	7.16	H355LNK-1569
24	4.0	180	7.16	H355LSK-4406
25	4.5	175	7.16	H355LSK-1622
26	1.8	200	8.86	TH355LSK-4889
27	2.2	225	8.86	H355LSK-2924
28	3.5	195	8.86	H355LNK-2052
29	4.0	195	8.86	H355LSJ-3914
30	5.0	120	8.86	H355LSK-4597
31	6.0	100	8.86	G355LSK-4575
32	4.0	170	10.7	H355LSJ-3133
33	4.5	140	10.7	H355LSJ-3369
34	5.0	170	10.7	H355LSK-4116
35	5.5	120	10.7	H355LSK-3334
36	6.0	125	10.7	H355LSK-3149
37	7.0	140	10.7	H355LNK-4727
38	3.0	160	14.3	H355LSJ-1156
39	5.0	175	14.3	H355LSK-2922
40	5.5	130	14.3	H355LNK-2037
41	6.0	90	14.3	H355LSJ-4539
42	8.0	100	14.3	TH355LSK-4876
43	10.0	75	14.3	H355LSJ-4571
44	0.7	430		H355LSK-2032
45	3.0	260		H355LNK-1132
46	3.5	300		H355LNK-1231
47	4.0	220		H355LNK-4627
48	4.5	200		H355LNK-1237
49	5.0	200		TH355LNK-4867
50	6.0	150		TH355LNK-4478
51	7.0	150		H355LNK-2931
52	8.0	100		H355LSK-4079
53	10.0	80		TH355LNK-4550

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LPF & EQT STANDARD FILTER SELECTION GUIDE

LPF

TYPE 4FT

No.	Cut-Off Freq. (MHz)	Group Delay Time (ns)	Trap Freq. (MHz)	TOKO Part No.
1	1.5	660	3.58	H356LNL-2754
2	2.0	490	3.58	H356LNL-3372
3	2.2	500	3.58	H356LSM-2942
4	2.5	350	3.58	H356LSM-4609
5	2.8	550	3.58	H356LSM-5199
6	3.0	300	3.58	H356LSL-2554
7	1.0	500	4.43	H356LNM-1990
8	2.0	640	4.43	H356LSM-3382
9	2.5	400	4.43	H356LNM-5128
10	2.8	500	4.43	H356LSM-2470
11	3.0	500	4.43	H356LSM-2476
12	2.2	300	4.43	H356LSM-2851
13	3.5	280	4.43	TH356LSM-4873
14	4.0	150	4.43	TH356LDL-5010
15	5.0	150	4.43	H356LDL-2669
16	1.5	300	7.16	H356LNK-3271
17	2.8	450	7.16	H356LNM-2167
18	3.0	400	7.16	H356LSM-3052
19	3.5	200	7.16	H356LDM-3967
20	4.0	230	7.16	H356LSM-4974
21	4.5	150	7.16	H356LDL-3339
22	5.0	200	7.16	H356LNL-3237
23	5.5	220	7.16	H356LSM-5120
24	6.0	90	7.16	H356LDM-4935
25	6.0	90	7.16	H356LDM-4701
26	5.5	280	8.86	H356LNM-3795
27	5.5	180	10.70	TH356LNM-5189
28	6.0	230	10.70	H356LSM-2671
29	7.0	150	10.70	H356LSL-2974
30	4.5	250	14.30	H356LSM-3567
31	5.5	250	14.30	H356LSM-3518
32	6.0	220	14.30	H356LSM-2951
33	7.0	220	14.30	TH356LSM-5109
34	8.0	130	14.30	TH356LSK-3811
35	1.0	500		H356LNL-3638
36	5.0	180		TH356LNL-3919
37	5.5	310		H356LNM-2519
38	6.0	220		H356LSM-3648
39	7.0	250		TH356LNM-4505
40	8.0	230		TH356LNM-4449

EQT

TYPE 4FUS

No.	Band Width (-3dB MHz)	Group Delay Time (ns)	TOKO Part No.
1	1.5	60	G354EAI-4714
2	5.0	80	G354EAI-3049
3	2.0	150	G354EAI-4346
4	1.5	180	TG354EAI-5111
5	1.5	220	G354EAI-4947
6	1.5	240	G354EAI-1089
7	1.5	250	G354EAI-1388
8	0.5	400	G354EAI-4249
9	0.4	500	G354EAI-4647
10	0.4	600	G354EAI-4648

TYPE 4FW

No.	Band Width (-3dB MHz)	Group Delay Time (ns)	TOKO Part No.
1	10	70	G355ENK-3277
2	10	90	G355ENK-4546
3	10	100	G355ENK-3268
4	9	120	G355ENK-4455
5	6	160	G355ENK-4497
6	7	150	G355ENK-3238
7	5	180	G355ENK-4667
8	5	200	G355ENK-3504
9	4	220	G355ENK-3404
10	3	250	G355ENK-4099
11	3	300	G355ENK-4100
12	1.5	600	G355ENK-1677
13	1.5	650	G355ENK-2221
14	7	140	TG355ENK-5239

TYPE 4FT

No.	Band Width (-3dB MHz)	Group Delay Time (ns)	TOKO Part No.
1	10	150	G356ENM-3269
2	10	180	G356ENM-4136
3	9	200	G356ENM-4180
4	8	240	H356ENM-4338
5	7	250	H356ENM-3018
6	5	300	H356ENM-3823
7	4	350	G356ENM-2705
8	4	400	G356ENM-4605
9	4	450	G356ENM-2633
10	3	500	G356ENM-2631
11	2	550	G356ENM-4919
12	2	650	G356ENM-4926

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BPF

TYPE 4FS

No.	Center Freq. (MHz)	Band Width (-3dB MHz)	Group Delay Time (ns)	Trap Freq. (MHz)	TOKO Part No.
1	3.58	2.0	150		H353BCH-3318
2	3.58	1.8	200		H353BCH-3005

TYPE 4FUS

No.	Center Freq. (MHz)	Band Width (-3dB MHz)	Group Delay Time (ns)	Trap Freq. (MHz)	TOKO Part No.
1	3.58	3.8	100		H354BAI-4184
2	3.58	3.0	120		H354BAI-2660
3	3.58	2.8	150		H354BAI-4163
4	3.58	2.2	200		H354BAI-3200
5	3.58	1.8	200		H354BAI-4404
6	3.58	1.8	250		H354BAI-2998
7	3.58	1.2	270		H354BAI-3946
8	3.58	1.4	300		H354BAI-3195
9	3.58	1.3	350		H354BAI-3160
10	3.58	1.1	400		H354BAI-3927
11	3.58	1.0	450		H354BAI-2771
12	3.58	0.8	500		H354BAI-4601
13	4.43	2.1	150		H354BAI-3287
14	4.43	2.3	200		H354BAI-3989
15	4.43	1.6	250		H354BAI-1146
16	4.43	1.6	300		H354BAI-1748
17	4.43	1.1	400		H354BAI-4214

TYPE 4FW

No.	Center Freq. (MHz)	Band Width (-3dB MHz)	Group Delay Time (ns)	Trap Freq. (MHz)	TOKO Part No.
1	1.5	1.2	1500		H355BDK-3315
2	1.5	0.2	2500		H355BDK-3852
3	1.7	0.3	1350		H355BDK-4061
4	1.7	0.2	3300		H355BDK-3853
5	3.58	1.3	350	4.84	H355BSJ-4013
6	3.58	2.7	400	4.84	H355BSK-1959
7	3.58	2.2	500	4.84	H355BSK-4944
8	3.58	3.4	250	5.06	H355BDJ-1557
9	3.58	2.6	450	5.06	H355BSK-2372
10	4.21	0.8	800		A355BNK-3798
11	4.32	1.9	450		H355BDK-1025
12	4.43	1.2	450	5.7	H355BSK-3536
13	4.43	2.3	500	5.7	H355BSK-1545
14	5.06	0.8	500		H355BDK-3478
15	5.06	1.0	700		A355BNK-3801
16	3.58	2.5	150		H355BSJ-4285
17	3.58	2.3	220		H355BSJ-1710
18	3.58	2.0	250		H355BSJ-3135
19	3.58	2.0	270		H355BSJ-1449
20	3.58	1.3	350		H355BDI-4112
21	3.58	2.5	400		H355BSK5218
22	4.43	2.5	180		H355BSJ-2953
23	4.43	2.0	220		TH355BDI-4957
24	4.43	1.2	350		H355BDI-4325

TYPE 4FT

No.	Center Freq. (MHz)	Band Width (-3dB MHz)	Group Delay Time (ns)	Trap Freq. (MHz)	TOKO Part No.
1	1.50	0.3	2000		H356BTJ-5192
2	1.50	0.3	2500		H356BTK-2785
3	1.50	0.2	3000		TH356BTK-4821
4	1.50	0.2	3500		TH356BTK-4165
5	1.50	0.25	5000		TH356BTK-4984
6	1.70	0.2	6000		H356BTK-4166
7	3.58	1.0	500	5.06	H356BDM-1743
8	4.32	0.4	1000		H356BTJ-3599
9	4.43	1.5	550	5.70	H356BDL-3454
10	5.06	0.8	700		A356BTL-3456
11	5.17	0.4	1300		H356BTJ-3770
12	3.58	4.5	100		H356BTK-4291
13	3.58	3.0	200		H356BTK-1641
14	3.58	2.5	250		H356BTJ-1642
15	3.58	2.5	300		TH356BTM-4708
16	3.58	1.2	400		H356BTK-4835
17	3.58	1.2	500		H356BTL-1032
18	3.58	2.0	550		H356BTK-4672
19	3.58	0.7	700		H356BTK-5016
20	4.43	3.0	200		TH356BTM-4709

TRAP

TYPE 4FS

No.	Trap Freq. (MHz)	Attenuation (dB)	TOKO Part No.
1	1.50	37	A353TCH-1120
2	3.58	19	A353TCH-1194
3	4.286	32	A353TCH-3649
4	4.77	33	A353TCH-4183
5	4.80	32	A353TCH-2652
6	6.37	24	A353TCH-4221
7	7.16	34	A353TCH-4547
8	7.96	45	A353TCH-1436
9	8.867	16	A353TCH-4296
10	9.55	37	A353TCH-4185
11	13.50	47	A353TCH-4707
12	14.30	29	A353TCH-3379

TYPE 4FS

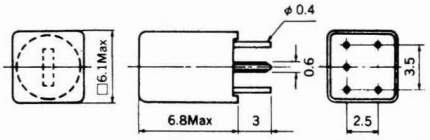
No.	Trap Freq. (MHz)	Attenuation (dB)	TOKO Part No.
1	1.50	24	A353TCH-1114
2	4.43	17	A353TCH-4762
3	4.46	26	A353TCH-2195
4	7.16	35	A353TCH-5127
5	9.80	21	A353TCH-3216
6	13.50	31	TA353TCH-3640

Medium Frequency LC Filters

Single, Double, Triple or Quadruple

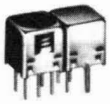
Frequency Range: 0.1-15MHz
Inductance Range: 10-700µH
Optional Capacitance Value: 4 to 750PF
Q: 40

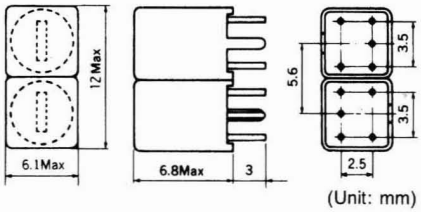
5VLS (Single)



(Unit: mm)

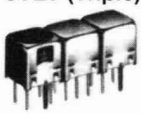
5VLW (Double)

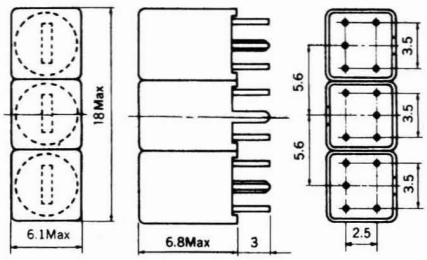




(Unit: mm)

5VLT (Triple)

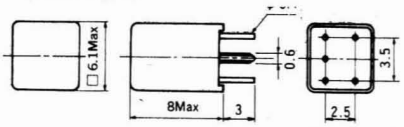




(Unit: mm)

5VUS (Single)

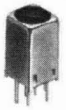
(Fixed type)

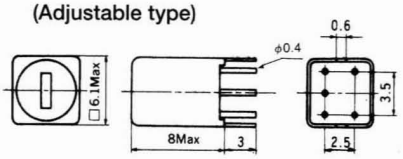


(Unit: mm)

5VS (Single)

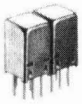
(Adjustable type)

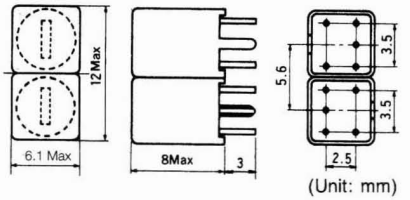




(Unit: mm)

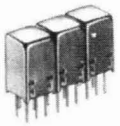
5VSW (Double)

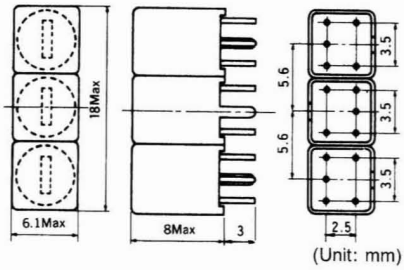




(Unit: mm)

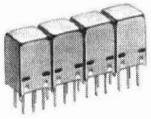
5VST (Triple)

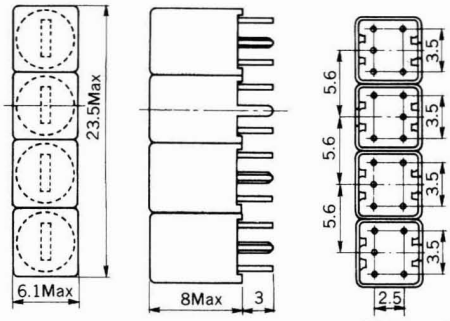




(Unit: mm)

5VSQ (Quadruple)





(Unit: mm)

Features

- LC block filters based on 5mm square coil units.
- Adjustable and non-adjustable types available. Up to four units may be used in combination.
- Shield case fitted.
- Basic units will take up to 2 built-in capacitors.
- High adaptability allows single use, groups of two, three or four units.
- Suitable for highpass, lowpass, and bandpass filters, delay lines, and equalizers.
- Superior temperature and humidity response.

Applications

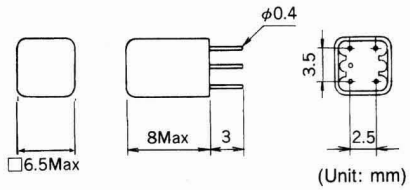
- Small, low-profile video frequency LC filters for VCR, video cameras, etc.

Medium Frequency LC Filters

5VN Series, Single (5VNS), Double (5VNW), Triple (5VNT), Quadruple (5VNQ) & (5VNH)

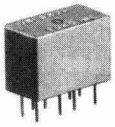
Frequency Range: 0.1-15MHz
Inductance Range: 10-700µH

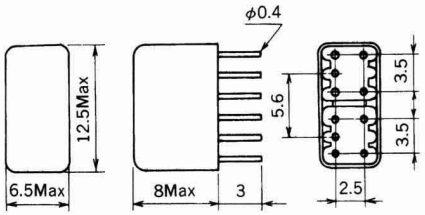
5VNS (Single)



(Unit: mm)

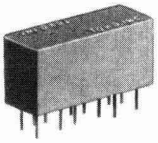
5VNW (Double)

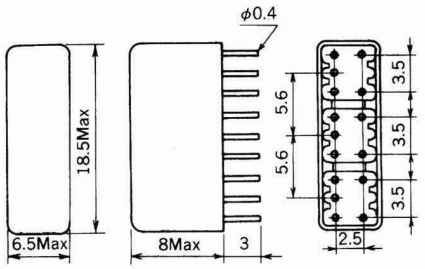




(Unit: mm)

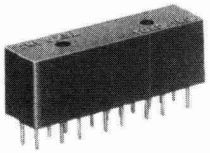
5VNT (Triple)

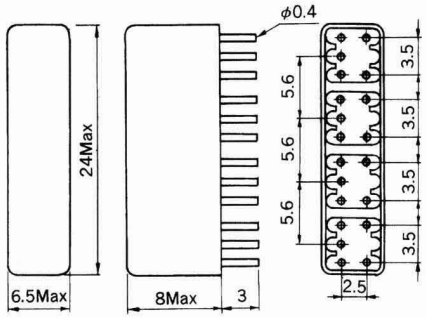




(Unit: mm)

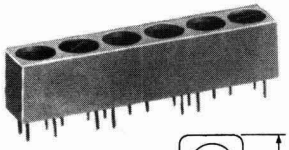
5VNQ (Quadruple)

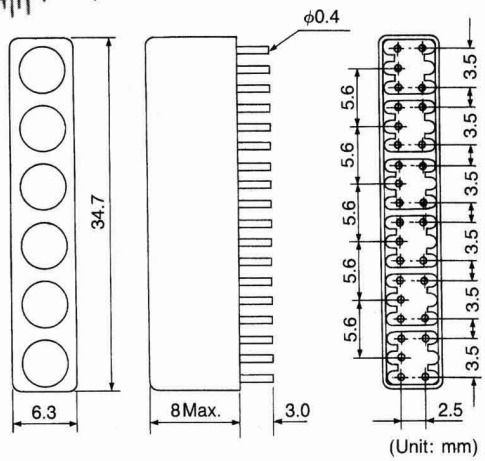




(Unit: mm)

5VNH (Hexad)





(Unit: mm)

Features

- LC block filters based on 5mm square coil units.
- Adjustable and non-adjustable types available. Up to six units may be used in combination.
- High Q coil in resin case.
- Basic units will take up to 2 built-in capacitors.
- High adaptability allows single use, or in groups of two, three, four or six units.

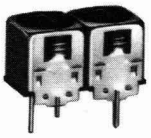
Medium Frequency LC Filters

Double (5VFW, 5VFNW)
Triple (5VFT, 5VFNT)
Quadruple (5VFQ, 5VFNQ)
Quintuple (5VFP, 5VFNP)

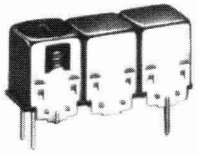
Frequency Range: 0.1-15MHz
Inductance Range: 10-700µH
Optional Capacitance Value: 4-750PF
5VF Series Q: 40
5VFN Series Q: 80

5VF Series

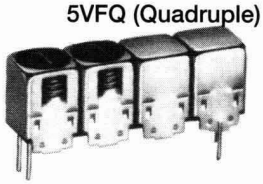
5VFW (Double)



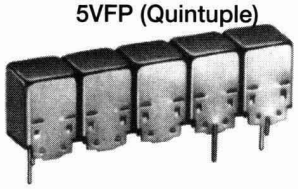
5VFT (Triple)

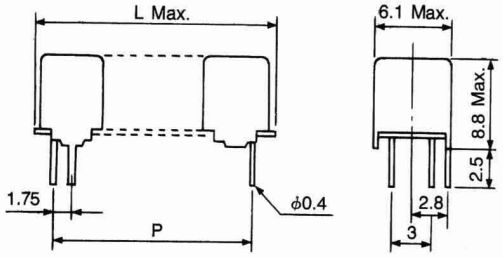


5VFQ (Quadruple)



5VFP (Quintuple)



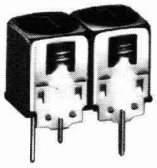


Type	Element L	Element C	L (Max.)	P
5VFW	2	4	12.2	9.1
5VFT	3	6	17.9	14.8
5VFQ	4	8	23.6	20.4
5VFP	5	10	29.3	26.0

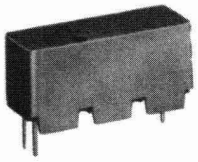
(Unit: mm)

5VFN Series

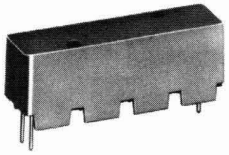
5VFNW (Double)



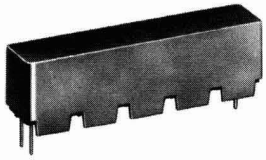
5VFNT (Triple)

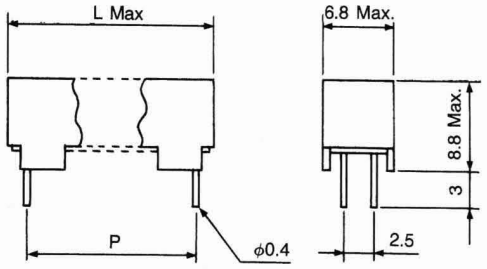


5VFNQ (Quadruple)



5VFNP (Quintuple)





Type	Element L	Element C	L (Max.)	P
5VFNW	2	4	12.5	9.1
5VFNT	3	6	18.3	14.8
5VFNQ	4	8	24.0	20.4
5VFNP	5	10	29.8	26.0

(Unit: mm)

Features

- External connector terminals IN, OUT, GND and case lug.

Applications

- Also known as 3-terminal filters, a series of high-performance components for video applications, allowing assembly using minimum number of terminals — IN, OUT, GND and case lug.

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STANDARD FILTERS SELECTION GUIDE

5V Series

TOKO Part Number	Type	BW or FC (MHz) @ -3dB	I/O Impedance (Ω)	Notes
H321LNP-1436PBAB	5VFNP	6.0	1200	400ns D.L.
H345HEO-6277VFD	5VNQ	6.0	1000	400ns D.L.
H286BAIS-6276DAD	5VUS	2.8/4.3	1000	3.58MHz BPF
H286BAIS-4963DAD	5VUS	3.73/5.13	1000	4.43MHz BPF
				FOR CCD TV CAMERA
H327LNKS-1329MGV	5VLW	3.5	1000	Y-LPF
H326LAIS-1282	5VLUS	4.0	1000	D.L. (180ns)
H328LSMS-1328	5VLT	2.5	1000	Y-EQT (400ns)
H325LCIS-1330	5VLS	0.7	1800	B.R-LPF
H326BAIS-1062	5VLUS	2.8/4.3	1000	BPF 3.58MHz
				DELAY LINES
G286BAIS-3066DFD	5VUS	10	1000	EQT 50ns (10MHz)
H287LNIS-3092AD	5VSW	10	1000	D.L. 80ns (10MHz)
G286EAIS-3065DFD	5VUS	10	1000	EQT 100ns (4MHz)
G287ENKS-3141LAD	5VSW	10	1000	EQT 100ns (10MHz)
H287LNIS-3093LAD	5VSW	7	1000	D.L. 100ns (5MHz)
H287LNIS-3094LAD	5VSW	6	1000	D.L. 120ns (6MHz)
G287ENKS-3140	5VSW	10	1000	EQT 130ns (8MHz)
H286EAIS-3158DFD	5VUS	10	1000	EQT 150ns (3.5MHz)
G287ENKS-3042LAD	5VSW	10	1000	EQT 150ns (7MHz)
H287LNIS-3095LAD	5VSW	4.5	1000	D.L. 150ns (5MHz)
G287ENKS-3119LAD	5VSW	10	1000	EQT 200ns (5MHz)
G287ENKS-3046LAD	5VSW	10	1000	EQT 250ns (4MHz)
G287ENKS-3125LAD	5VSW	10	1000	EQT 300ns (3.5MHz)
H288LSMS-3245	5VST	6	1000	LPF 300ns (6MHz)
G288ENMS-3126TCD	5VST	10	1000	EQT 400ns (4MHz)
H290LNMN-6299UWD	5VNT	4	1000	Y-LPF 450ns (3.5MHz)
G288ENMS-3101TCD	5VST	8	1000	EQT 500ns (3.5MHz)
G290ENMN-3060TCD	5VNT	8	1000	EQT 750ns (2.5MHz)

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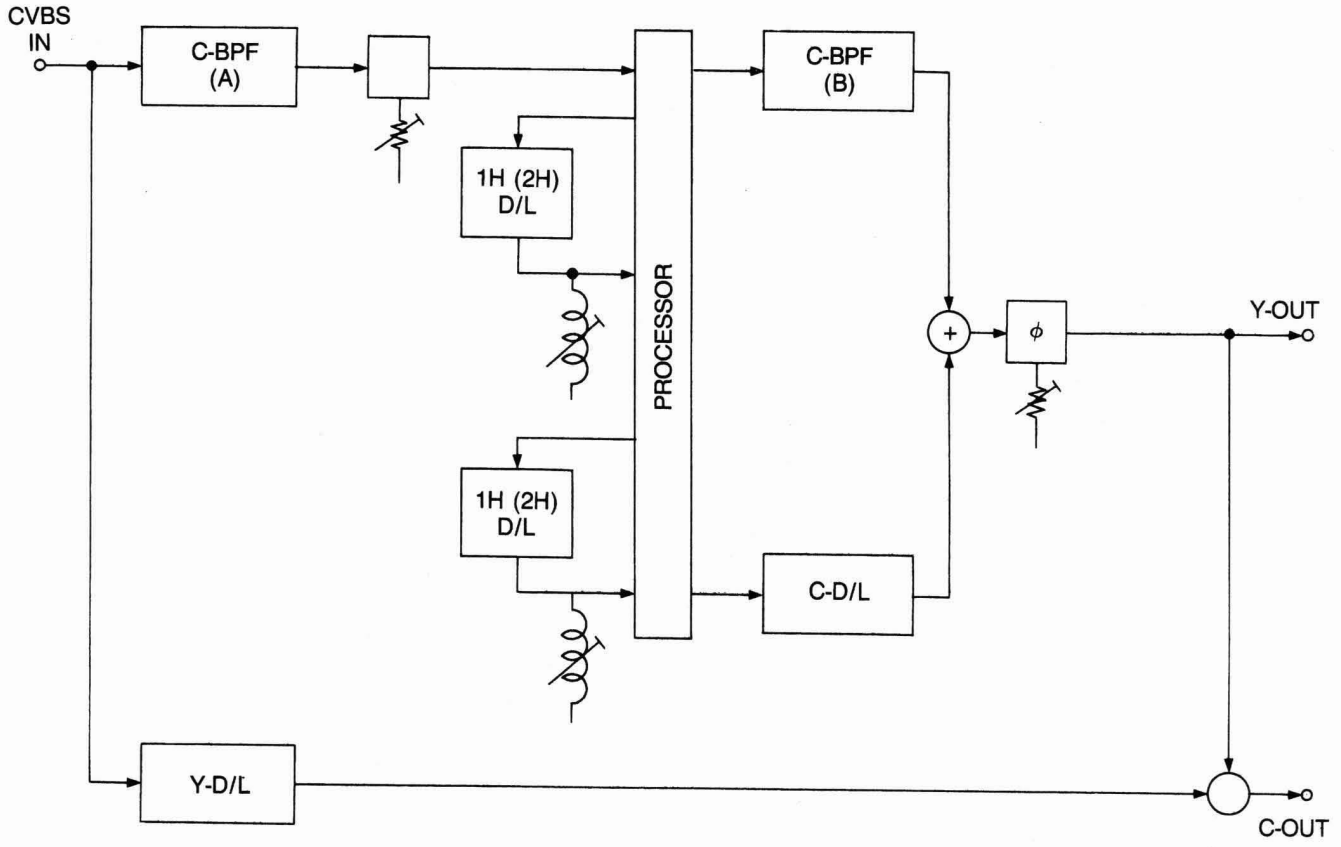
Y/C Separator for CTV

Block Diagram



Recommended LC Filters

[1] NTSC System

Purpose	Type	TOKO Part No.	Remarks
Y-D/L	5VFNP	TG321ENQ-2618PMA	
C-BPF (A)	5VFW	TH314BDKS-2689WMD	
C-BPF (B)	5VFW	TH314BSKS-2747WBD	
C-D/L	5VMP	TH322LSQ-2976MAD	

[2] PAL System

Purpose	Type	TOKO Part No.	Remarks
Y-D/L	5VFNP	TG321ENQ-2618PMA	
C-BPF (A)	5VFW	TH314BDKS-2622WMD	
C-BPF (B)	5VFW	TH314BDIS-2639WAD	
C-D/L	5VMP	TH322LSQ-2976MAD	

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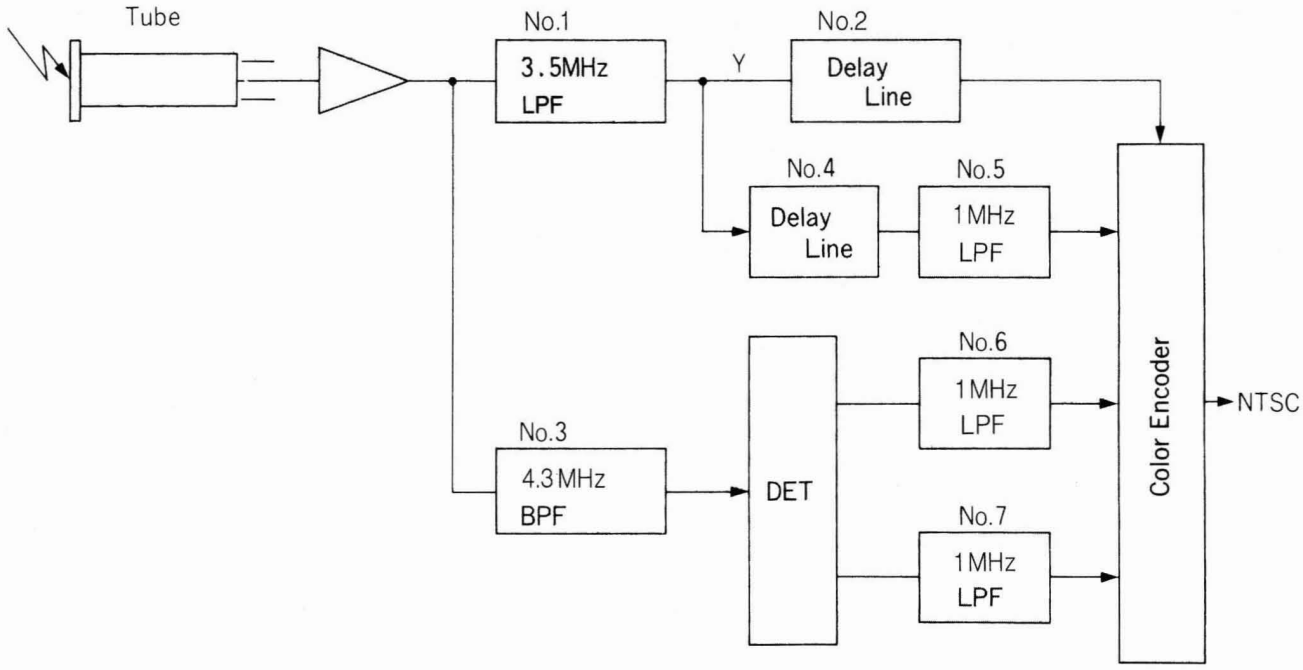
Video Camera

Block Diagram



Recommended LC Filters

Purpose	Type	TOKO Part No.	Remarks
3.5MHz LPF	5VSW	H287LSKS-2088HFD or H287LNKS-2071LKD	250nsec
400nsec D/L	5VST	H288LNMS-2090TED	
4.3MHz BPF	5VUS	H286BAIS-2054DAD or H286BAIS-2085DDD	3.5MHz
180nsec D/L	5VSW	H287LSKS-2089HFD	
1MHz LPF	5VUS	H286LBIS-2086DAD	

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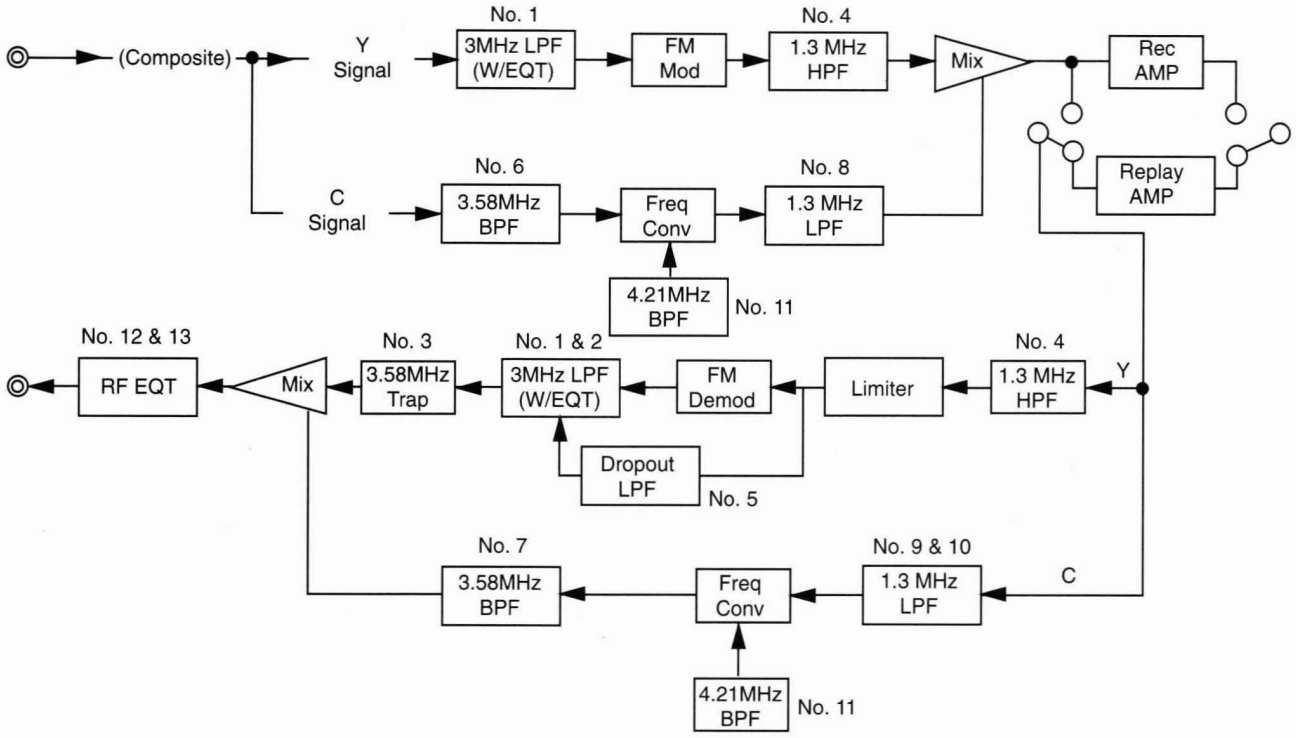
VHS NTSC System

Block Diagram



Recommended LC Filters

Purpose & No.			5VU Series etc.		5VF Series		Remarks
			Type	TOKO Part No.	Type	TOKO P/N	
Luminance	Y-LPF	1	5VNT	H290LNMN-3296TTD	5VFNT	5VFNT-1070	
		2			5VFNQ	5VFNQ-1179	HiFi PB
	3.58MHz TRAP	3	5VS	TA285TCHS-5049DLD			
	Y-HPF	4	5VUS	H286HAHS-3312DED			
	Dropout LPF	5	5VSW	H287LNKS-5040LTD	5VFW	5VFW-1167	
Chroma	3.58MHz BFP	6	5VUS	H286BAIS-5053DCD			
		7	5VSW	H287BSKS-5054JDD	5VFW	5VFW-1170	
	C-LPF	8	5VUS	H286LAIS-5055DDD			
		9	5VUS	H286LAIS-4793DDD			
		10	5VUS	H286LHIS-4639DDD			HiFi PB
	4.21MHz BPF	11	5VSW	H287BNKS-5064LQE	5VFW	5VFW-1175	
Others	RF EQT	12	5VUS	G286EAIS-5061DFS			
		13	5VSW	G287ENKS-5060LAD	5VFW	5VFW-1017	
HiFi Audio & Audio	12kHz LPF		ABW07	257BLR-3918N			
			10PD	253AGGS-1066			
	20KHz LPF		ABW07	A257BLV-4087N			
	1.3MHz BPF		5VST	H288BTKS-5057PPD	5VFT	5VFT-1176	
	1.7MHz BPF		5VST	H288BTKS-5058QGD	55VFT	5VFT-1177	

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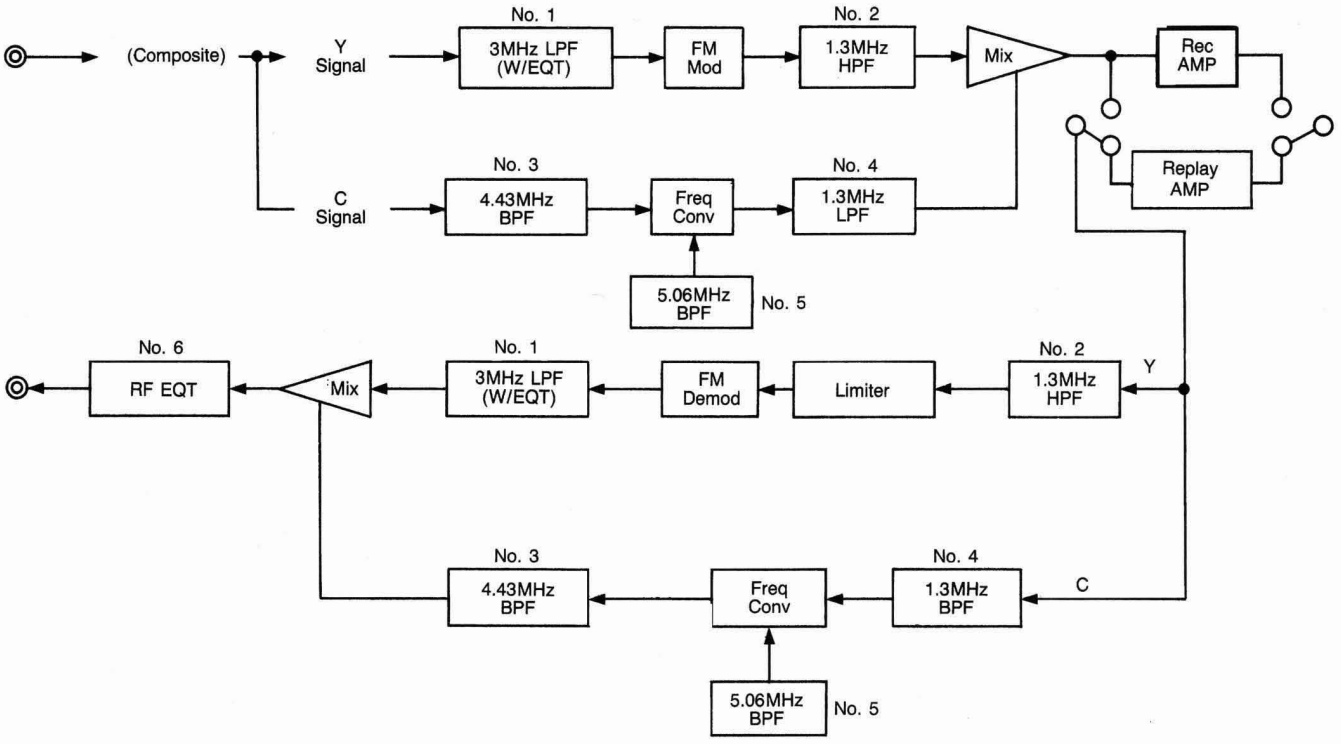
VHS PAL System

Block Diagram



Recommended LC Filters

Purpose & No.			5VL/5VU Series etc.		5VF Series	
			Type	TOKO Part No.	Type	TOKO P/N
Luminance	Y-LPF	1	5VNT	H290LNMN-3296TTD	5VFNT	5VFNT-1070
					5VMP	5VMP-1072
				5VFP	5VF	5VFP-1120
			5VSR	H288LNLS-4769TTD		
	Y-HPF	2	5VUS	H286HANS-3312DED		
Chroma	4.43MHz BPF	3	5VSW	H287BSKS-4968JDD	5VFW	5VFW-1154
					5VFT	5VFT-1071
			5VUS	H286BAIS-4963DAD		
	C-LPF	4	5VUS	H286LAIS-2574DDD		
			5VUS	H286LAIS-3486DDD		
	5.06MHz BPF	5	5VSW	H287BNKS-4901LQE	5VFW	5VFW-1069
			5VSW	H287BSKS-4595HAE		
Others	RF EQT	6	5VLW	G327ENKS-1234LAD	5VFW	5VFW-1031
HiFi Audio & Audio	12kHz LPF		ABW07	257BLR-3918N		
			10PD	253AGGS-1066		
	20kHz LPF		ABW07	A257BLV-4087N		
	1.4MHz BPF		5VLT	H328BTKS-1250PPD	5VFT	5VFT-1121
	1.8MMHz BPF		5VLT	H328BTKS-1251QGD	5VFT	5VFT-1122

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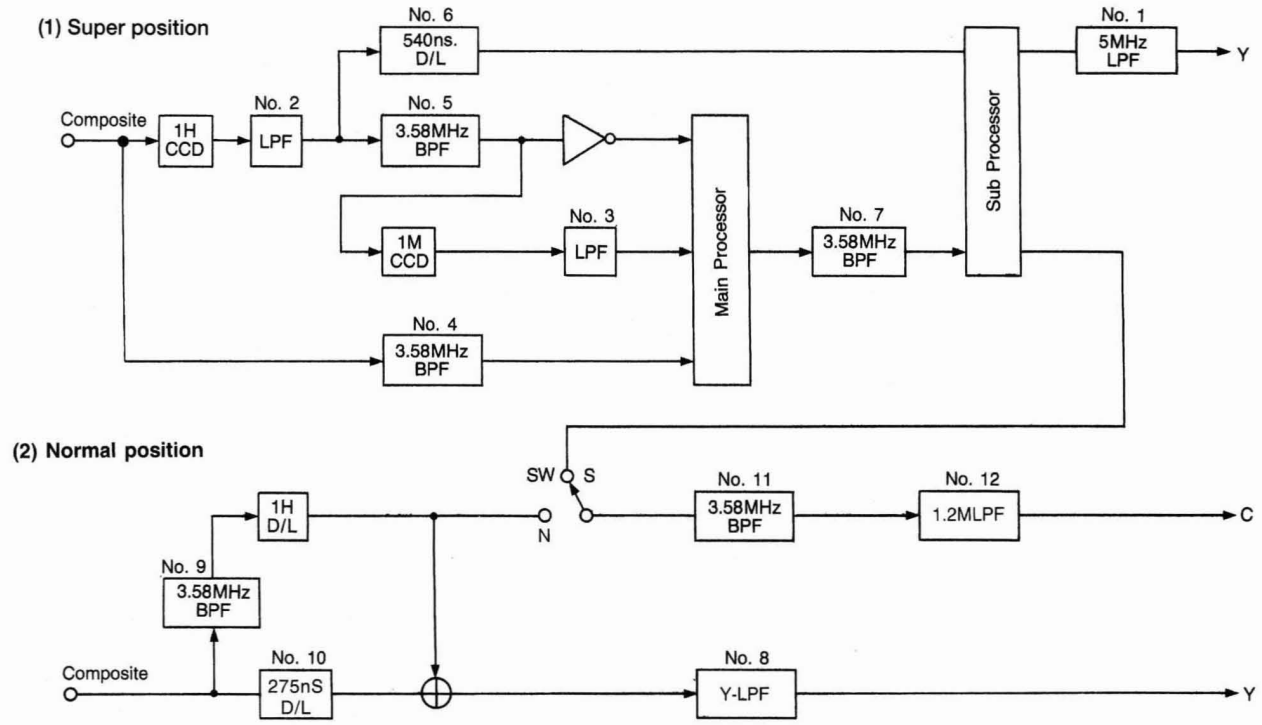
S-VHS NTSC System

Block Diagram



Recommended LC Filters

Purpose & No.		Type	TOKO Part No.	Position	
				S-VHS	N-VHS
Y-LPF	1	5VFNO	TH424LTUN-24500AC	●	
CCD LPF	2	5VFT	H315LSMS-2797TAD	●	
	3	5VFNQ	TH320LSN-2798QCD	●	
3.58MHz BPF	4	5VUS	H286BAIS-10303DAD	●	
	5	5VUS	H286BAIS-11042DAD	●	
540ns. D/L	6	5VMP	TH322LNP-2800MAAF	●	
3.53MHz BPF	7	5VFW	TH314BDIS-2801WAD	●	
Y-LPF	8	5VST	H288LSLS-8461TRD		●
3.58MHz BPF	9	5VUS	H286BAIS-9372DAD		●
275ns. D/L	10	5VFNT	G319ENM-2038TBD		●
3.58MHz BPF	11	5VSW	H287BSJS-9941JBD		●
1.2MHz LPF	12	5VUS	H286LAIS-9697DDD		●
Y-LPF	13	5VFNP	H321LNP-2162PHD	●	
	14	5VMP	H322LSQ-2032MAD	●	

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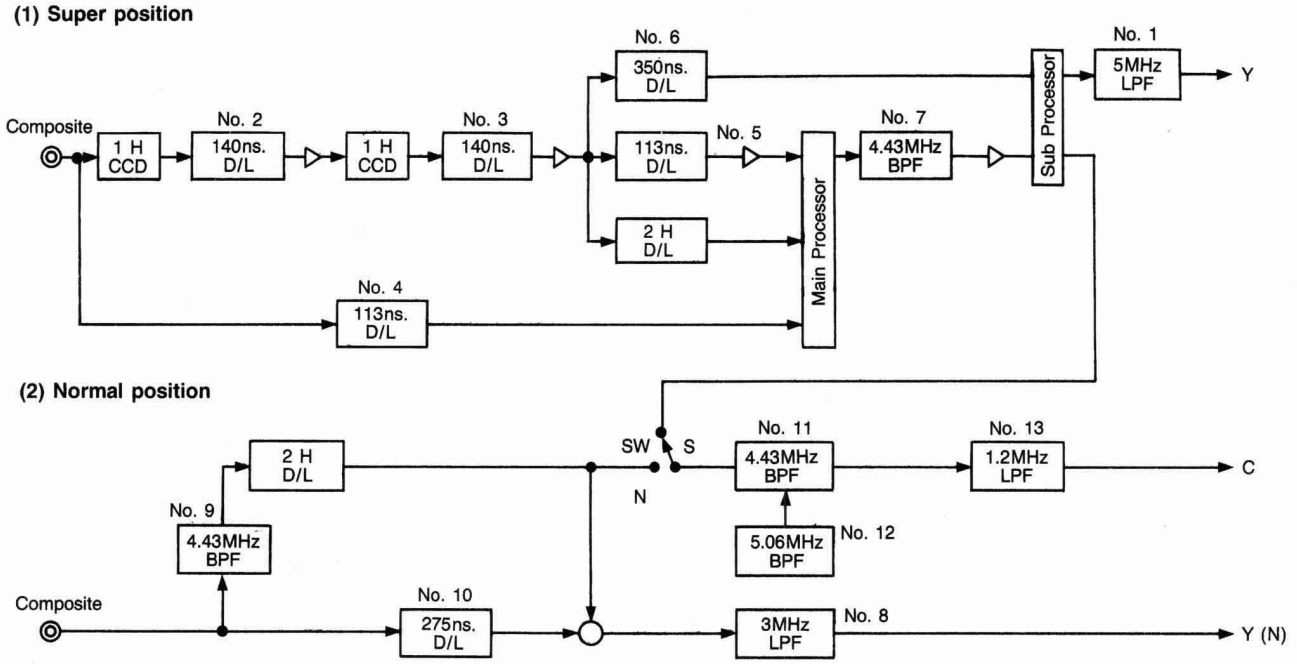
S-VHS PAL System

Block Diagram



Recommended LC Filters

Purpose & No.		Type	TOKO Part No.	Position	
				S-VHS	N-VHS
Y-LPF	1	5VFNO	TH424LTUN-24500AC	●	
140ns. D/L	2	5VFW	H1314LSKS-2451WAD	●	
	3	5VFW	H1314LSKS-2451WAD	●	
113ns. D/L	4	5VFQ	G316EQKS-2452QEJ	●	
	5	5VFQ	G316EQKS-2452QEJ	●	
350ns. D/L	6	5VFNQ	G320ENO-2453QDD	●	
4.43MHz BPF	7	5VFW	H314BDIS-2454WAD	●	
Y-LPF	8	5VFNQ	H320LSO-2286QCD		●
4.43MHz BPF	9	5VFW	H314BDIS-2454WAD		●
275ns. D/L	10	5VFNT	G319ENM-2038TBD		●
4.43MHz BPF	11	5VFW	H314BSK-2073WBD		●
5.06MHz BPF	12	5VFW	H314BDKS-1413WDD		●
1.2MHz LPF	13	5VUS	H286LAIS-3486DDD		●
Y-LPF	14	5VFNP	H321LNP-2162PHD	●	
	15	5VMP	H322LSQ-2032MAD	●	

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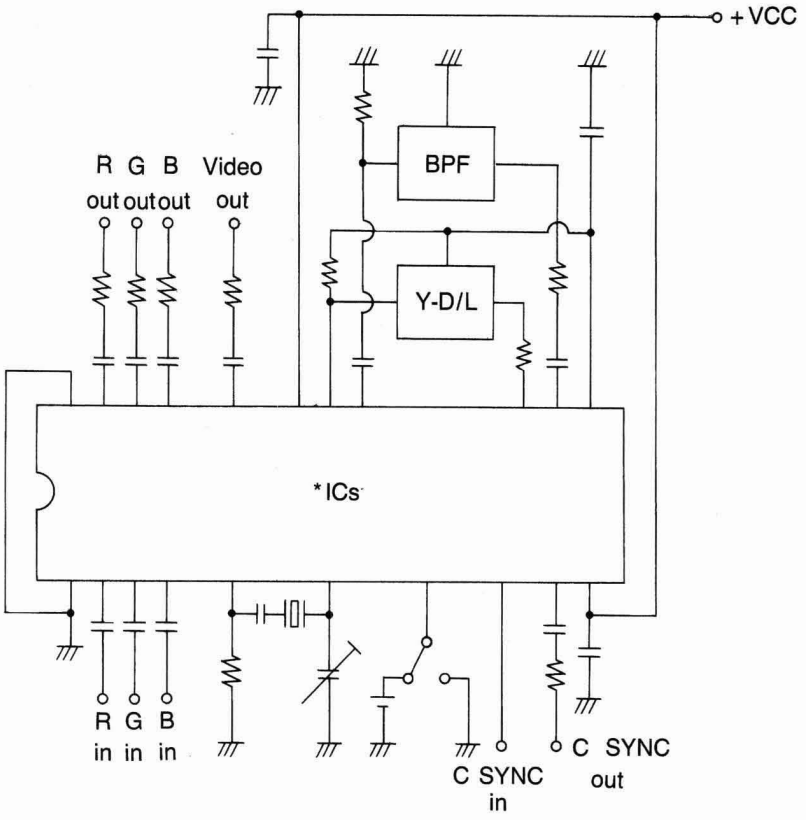
PAL/NTSC Encoder

Application Circuit (Ref. only)



*Ref. only:
MC1377, MC 13077 (Motorola)
CXA1219. CXA1229 (Sony)

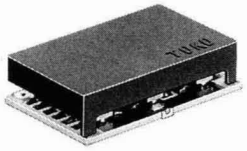
Recommended LC Filters

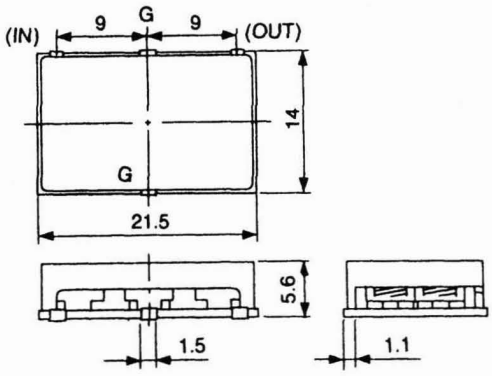
FOR USE WITH MOTOROLA MC13077 AND MC1377				
	PURPOSE	TYPE	PART NUMBER	I/O IMPEDANCE (Ω)
LEADED PACKAGE	Y-D/L (400NS)	5VFNT	H319LNM-3828TDD	1K/1K
	3.58 MHz BPF (NTSC)	5VUS	H286BAIS-6276DAD	1K/1K
	4.43 MHz BPF (PAL)	5VUS	H286BAIS-4963DAD	1K/1K
SURFACE MOUNT PACKAGE	Y-D/L (400NS)	4FT	H356LNM-7254	1K/1K
	3.58 MHz BPF (NTSC)	4FUS	H354BAI-1425DAD	1K/1K
	4.43 MHz BPF (PAL)	4FUS	H354BAI-1748DAD	1K/1K
FOR USE WITH SONY CXA 1229 AND CXA 1219				
	PURPOSE	TYPE	PART NUMBER	I/O IMPEDANCE (Ω)
LEADED PACKAGE	Y-D/L (180NS)	5VNT	H290LNLN-6104TUD	1K/1K
	3.58 MHz BPF (NTSC)	5VSW	H287BSJS-3108HWD	1K/1K
	4.43 MHz BPF (PAL)	5VSW	H287BSJS-4438	1K/1K
SURFACE MOUNT PACKAGE	Y-D/L (200NS)	4FW	TH355LNK-4867	1K/1K
	3.58 MHz BPF (NTSC)	4FUS	H354BAI-3200	1K/1K
	4.43 MHz BPF (PAL)	4FUS	H354BAI-3989	1K/1K

Type 4FFH, 4FFM

Frequency Range: 1 ~ 30MHz

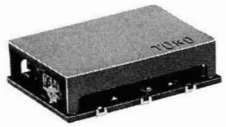
4FFH

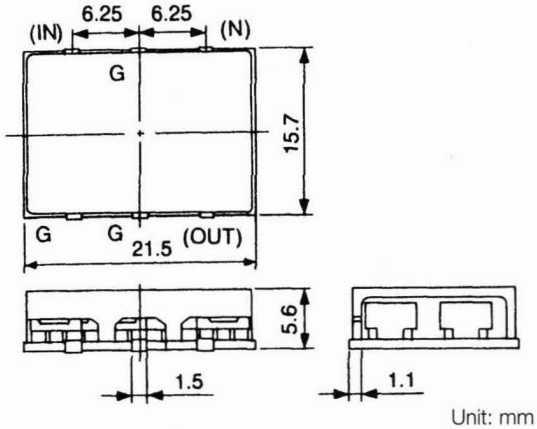




Unit: mm

4FFM





Unit: mm

Features

- Video LC filters suitable for automatic surface mounting
- Low profile structure with case
- Can be supplied in trays or taped
- No adjustment required (tuned at time of shipment from factory).
- Three types to suit a wide range of user needs.

Applications

- W-VHS VTR, MUSE decoders, HD cameras, etc.

Application: MUSE

Characteristics	Type	Toko Part Number
8.15MHz LPF	4FFM	693EG-0032
8.15MHz LPF	4FFH	692CF-0069

Application: W-VHS

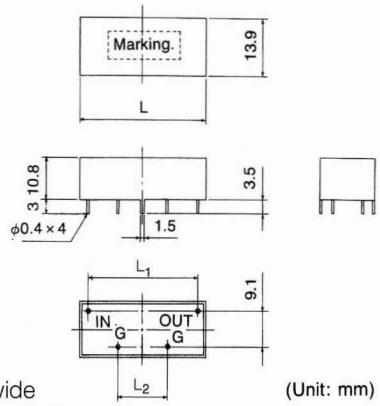
Characteristics	Type	Toko Part Number
14MHz LPF	4FFH	692CF-0052
14MHz LPF	4FFH	692CF-0057
4MHz LPF	4FFH	692CF-0048
4MHz LPF	4FFH	692CF-0053

Application: HD-CAMERA

Characteristics	Type	Toko Part Number
24MHz LPF	4FFH	692CF-0070
18MHz LPF	4FFH	692CF-0073
12MHz LPF	4FFH	692CF-0072

Precision LC Video Filters MZ, 5VZS

5-15MHz LPF
300-600ns. Delay Line



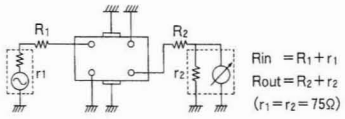
(Unit: mm)

Coil (pcs)	L	L_1	L_2
8	25.0	20.0	3.2
10	30.8	25.8	9.0
12	36.6	31.6	14.8
14	42.4	37.4	20.6

Features

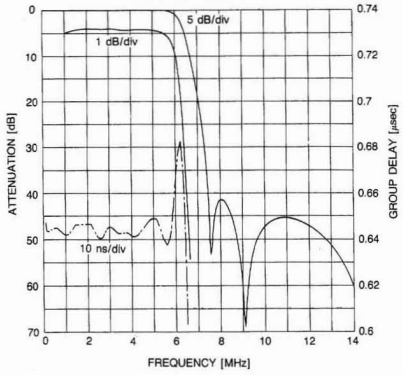
- Filters in these two series are suited for use in a wide range of video equipment. High precision has been built into the above filters for improvement in the quality of video reproduction.

Test Circuit

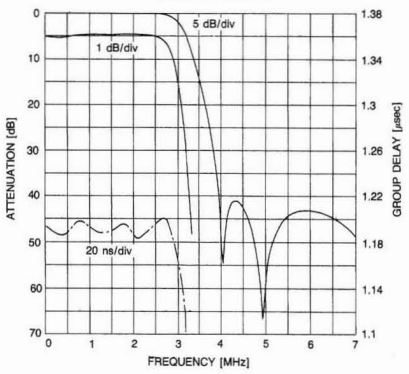


Typical Characteristics

603G-1030



603G-1031



STANDARD FILTERS SELECTION GUIDE

TYPE 5VZS

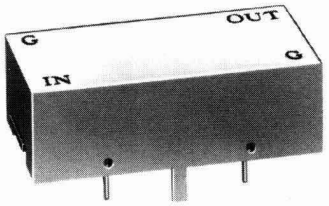
TOKO Part Number	Function	Impedance
603G-1030	5.75MHz	330Ω
603G-1031	2.75MHz	330Ω
603E-1083	8.15MHz	330Ω
603F-1121	8.15MHz	330Ω
603F-1131	20MHz	150Ω

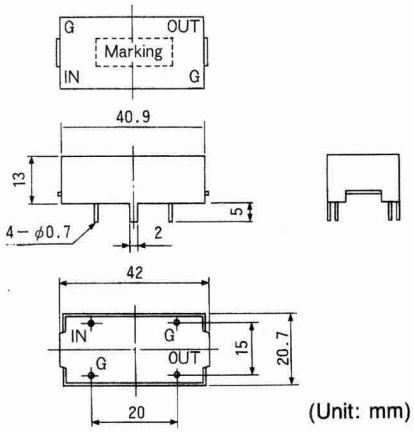
TYPE MZ

TOKO Part Number	Function	Impedance
643D-1001	8.15MHz	330Ω
643D-1002	18MHz	150Ω

High Definition Video LC Filters

5-36MHz LPF



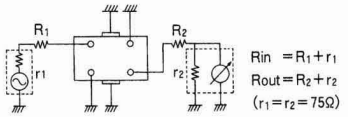


(Unit: mm)

Features

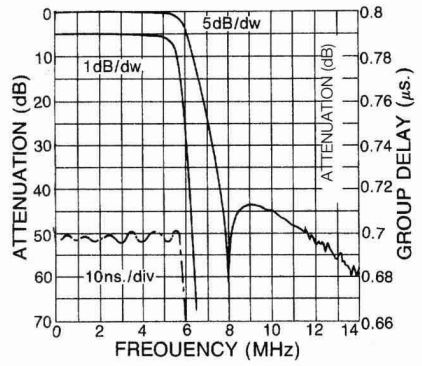
- This series has been designed to provide a degree of precision substantially higher than the past filters.
- These filters are recommended for use in office and business video equipment.

Test Circuit

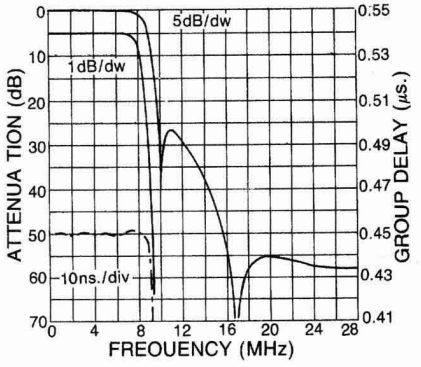


Typical Characteristics

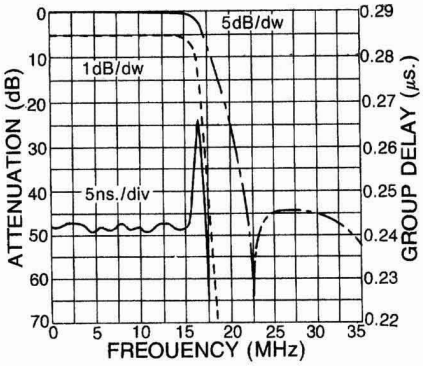
604E-013 5.5MHz



604F-0.58 8.4MHz



604E-086 15MHz

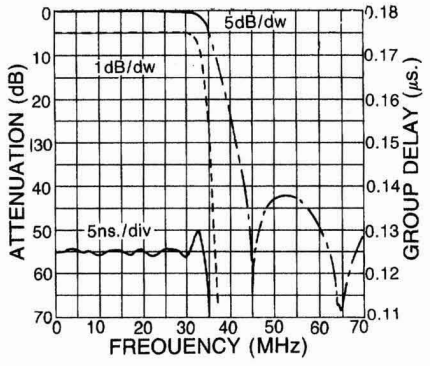


STANDARD FILTERS SELECTION GUIDE

TYPE HBF

TOKO Part Number	Function	Input/Output Rin & Rout (Ω)
604E-013	5.5MHz LPF	330
604E-020	20MHz LPF+APR	150
604E-054	5.4MHz LPF	330
604F-055	5.4MHz LPF+APR	330
604F-056	12MHz LPF	150
604F-057	12MHz LPF +APR	150
604F-058	8.4MHz LPF	470
604F-064	8.578MHz LPF	220
604F-065	10.125MHz LPF	220
604F-067	5.5MHz LPF+APR	330
604E-085	30MHz LPF	270
604F-086	15MHz LPF	270
604F-087	8.15MHz LPF	330

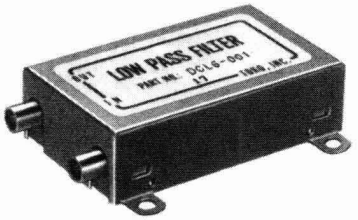
604E-085 30MHz



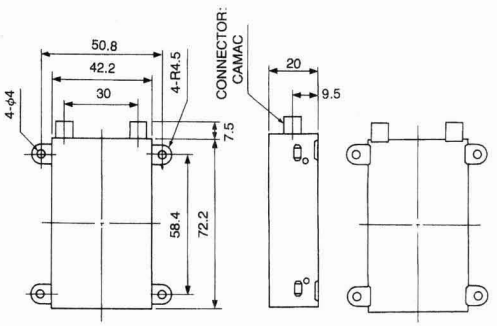
High Definition Video LC Filters/DCL6 & DCL8 Series

5-50MHz LPF
300-600ns. Delay Line

DCL6

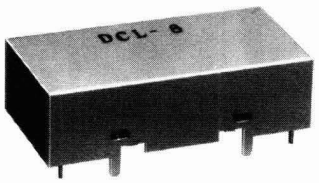


DCL6 Series

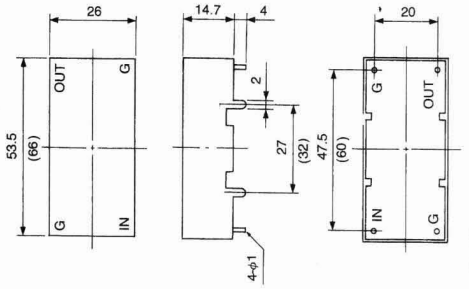


Unit: mm

DCL8



DCL8A, and -B Series



( ) for DCL8 B

Unit: mm

Features

- The filters in this series are the high precision type which meet with the characteristics of the CCIR 601 standards, recommended by the International Radio Consultative Committee, for studio quality digital television.

STANDARD FILTERS SELECTION GUIDE

TYPE DCL6

TOKO Part Number	Function	Impedance
DCL6-013	5.75MHz LPF (Y-Pri)	75Ω
DCL6-014	5.75MHz LPF (Y-Post)	75Ω
DCL6-015	2.75MHz LPF (Y-Pri)	75Ω
DCL6-016	2.75MHz LPF (C-Post)	75Ω

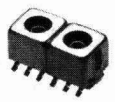
TYPE DCL8

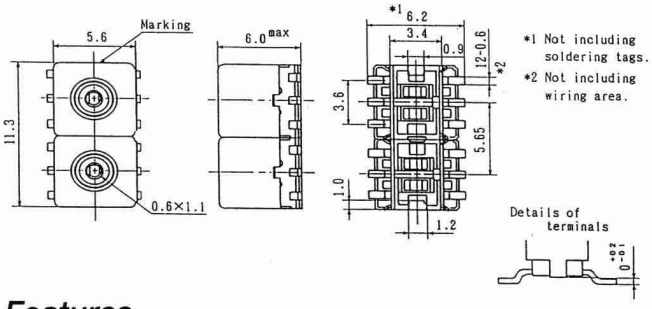
TOKO Part Number	Function	Impedance
DCL8B-026	30MHz LPF (Y-Post)	75Ω
DCL8B-028	15MHz LPF (Y-Post)	75Ω
DCL8B-024	5.75MHz LPF (Y-Post)	75Ω
DCL8A-022	46MHz LPF (Ap)	75Ω

High Frequency LC Filters
5CCEW Double Tuned Filter
5CCET Triple Tuned Filter

Frequency Range: 10-200MHz

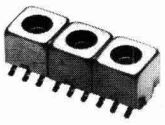
5CCEW

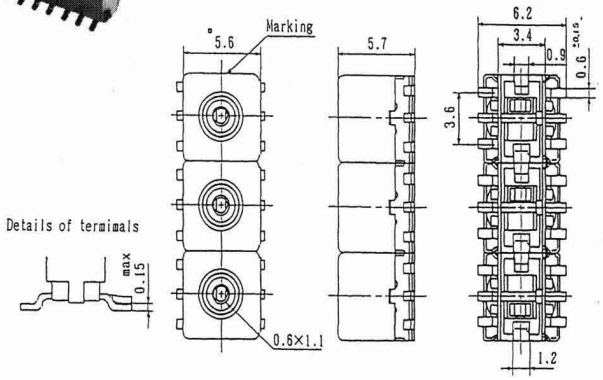




Unit: mm

5CCET





Unit: mm

Features

- Small and light.
- Suitable for double and triple assembly.
- Frequency may be pretuned before delivery.

Applications

- Ideal for portable wireless equipment, cordless telephones, etc.

STANDARD FILTERS SELECTION GUIDE

Band Pass Filter 5CCET/5CCEW

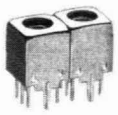
Toko Part Number	Center Frequency (MHz)	Bandwidth at -1dB (MHz)	Selectivity High Freq. Side (db) at Fo+( ) MHz	Selectivity Low Freq. Side (db) at Fo-( ) MHz	Ripple within BW (dB)	Insertion Loss (dB)	Impedance (IN/OUT) (ohm)
5CCET							
663BBX-011	6	0.3 min	18 min/1MHz	20 min/1MHz	0.5 max	4.0 max	50/50
663BBX-015	10	0.8 min	22 min/2.5MHz`	22min/2.5MHz	0.5 max	4.0 max	50/50
663BBX-026	21	1.4 min	28 min/5MHz	22min/5MHz	0.5 max	4.0 max	50/50
663BBX-050	45	4.0 min	22 min/10MHz	20min/10MHz	0.5 max	4.0 max	50/50
663BBX-060	60	4.5 min	26 min/15MHz	20 min/15MHz	0.5 max	4.0 max	50/50
663BBX-065	70	6.0 min	15 min/15MHz	15 min/15MHz	0.5 max	4.0 max	50/50
663BBX-066	72	4.0 min	30 min/15MHz	26 min/15MHz	0.5 max	4.0 max	50/50
663BBX-067	74	3.5 min	33 min/15MHz	27 min/15MHz	0.5 max	4.0 max	50/50
663BBX-071	82	4.5 min	30 min/15MHz	24min/15MHz	0.5 max	4.0 max	50/50
663BBX-075	90	6.0 min	23 min/15MHz	20 min/15MHz	0.5 max	4.0 max	50/50
663BBX-082	110	7.0 min	14 min/15MHz	14 min/15MHz	0.5 max	4.0 max	50/50
663BBX-088	140	16.0 min	13 min/25MHz	13min/25MHz	1.0 max	4.0 max	50/50
663BBX-090	150	17.0 min	15 min/30MHz	15 min/30MHz	1.0 max	4.0 max	50/50
663BBX-092	160	20.0 min	12 min/30MHz	12 min/30MHz	1.0 max	4.0 max	50/50
663BBX-094	170	21.0 min	10 min/30MHz	10 min/30MHz	1.0 max	4.0 max	50/50
5CCEW							
662BBX-015	21	1.6 min*	10 min/5MHz	14 min/5MHz	1.5 max	4.0 max	50/50
662BBX-036	28	1.4 min*	26 min/5MHz`	28min/5MHz	1.2 max	6.0 max	50/50
662BBX-040	46	4.0 min	15 min/10MHz	-	-	3.5 max	50/50

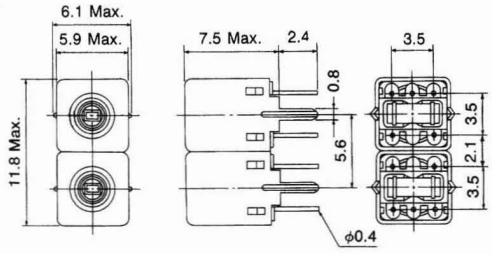
(*) = 3dB BW

High Frequency LC Filters
5KMW Double Tuned Filter
5KMT Triple Tuned Filter

Frequency Range: 10-150MHz
L: 0.03 ~ 50μH
Q: 40 ~ 70 (at 100MHz)

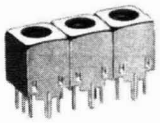
5KMW

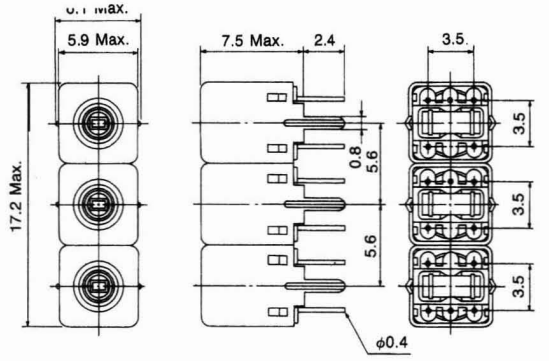




Unit: mm

5KMT

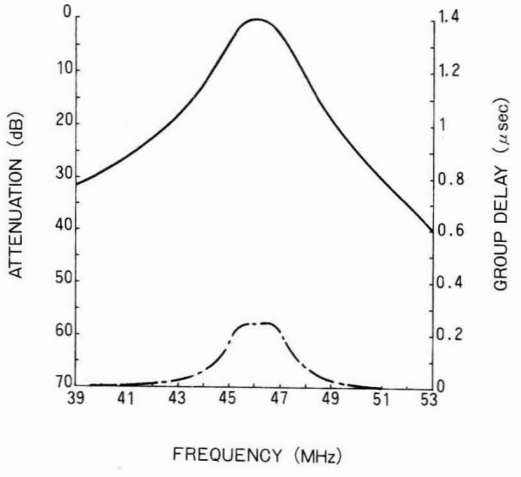




Unit: mm

Features
- Small and light.
- Suitable for double and triple assembly.
- Frequency may be pretuned before delivery

Applications
- Ideal for portable wireless equipment, cordless telephones, etc.



STANDARD FILTERS SELECTION GUIDE

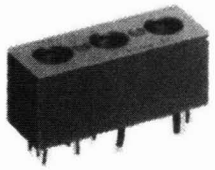
Band Pass Filter

TOKO Part Number	Type	Center Frequency (MHz)	Bandwidth (MHz)	Input/Output Impedance (Ω)
464BBX-002	5KMW	46	2 typ. (–3 dB)	75/75
464BBX-003	5KMW	50.4	2 typ. (–3 dB)	75/75
465BBXS-007	5KMT	156	8 min. (–1 dB)	50/50
465BBXS-009	5KMT	144	9 min. (–1 dB)	50/50
465BBXS-020	5KMT	9.6	0.6 min. (–3 dB)	50/50
465BBXS-034	5KMT	45	0.8 min. (–3 dB)	330/330

7KLT High Frequency LC Filters

Triple Tuned

Frequency Range: 10-150MHz
Inductance Range: 0.1-50µH
Optional Capacitance Values: 5-100pF



Features

- Can be designed as band pass, low pass, or high pass filters.
- Triple tuned for very high selectivity.
- Low profile, only 10.5mm high.
- Excellent environmental stability.
- Can be pretuned upon request.

Applications

- Cordless Phones
- VHF Transceivers
- Satellite Receivers
- CATV

STANDARD FILTERS SELECTION GUIDE

Band Pass

TOKO Part Number	Center Frequency (MHz)	Bandwidth (MHz) min.	Impedance (Ω)
335BXS-0050	10	1.7 (3dB)	330/330
335BBX-0113	24.58	1.5 (3dB)	50/50
335BBRS-0034	43	4.5 (1dB)	75/75
335BBXS-0053	44	8 (1dB)	50/50
335BBVS-0223	46.8	1 (1dB)	50/50
335BBVS-0224	49.8	1 (1dB)	50/50
335BBXS-0054	50.75	6 (1dB)	75/75
335BBV-0018N	70	16 (3dB)	75/75
335BBXS-0055	77.2	4 (3dB)	50/50
335BBXS-0056	83.2	3.5 (3dB)	50/50
335BBXS-0057	88.9	6 (3dB)	50/50
335BBV-0038	130	15 (1dB)	75/75

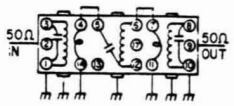
Low Pass & High Pass Filters

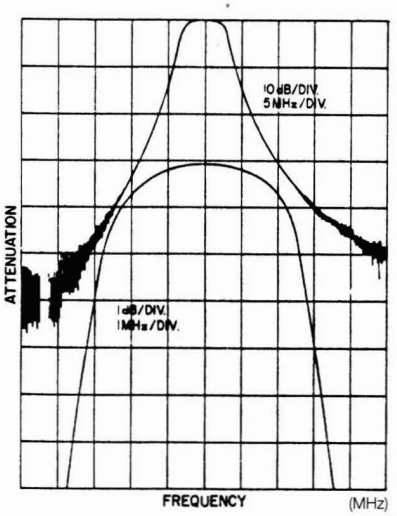
TOKO Part Number	Cut-off Frequency (MHz)	1st Pole Frequency (MHz)	Stopband Attenuation (dB)	Impedance (Ω)
335BHX-0048	56	45	35	75/75 HPF
335BHX-0046	60	49	35	75/75 HPF
335BLV-0112	80	100	40	50/50 LPF
335BLX-0047	80	90	30	75/75 LPF
335BLX-0049	84	95	25	75/75 LPF

continued from previous page

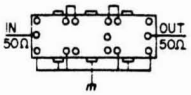
Typical Characteristics

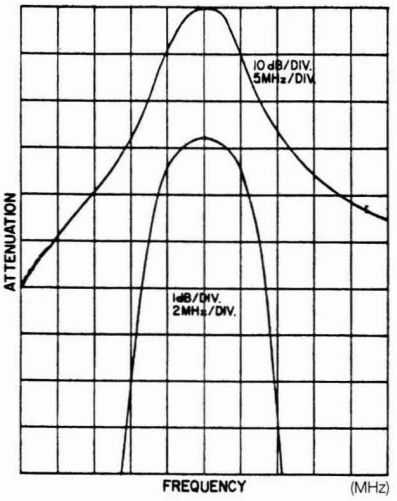
335BXS-0055



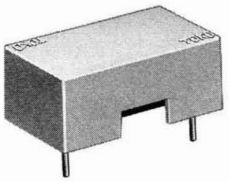


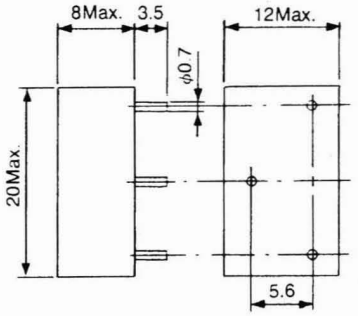
335BBXS-0057





DUP3
For 25 channel





Unit: mm

Features
- No adjustment required
- 3-terminal structure for easy mounting
- Unitary structure helps to prevent interference between transmission and reception circuits.
- Where necessary, multilayer connection can be used to improve attenuation.

Applications
- Used in transmitter output filter of receiver ANT/RF in common antenna devices of cordless telephones for the US market

STANDARD FILTERS SELECTION GUIDE

	BASE SET	HAND SET
ANT-RX	B803D-1005RX	H803D-1002RX
TX-ANT	B803D-1003TX	H803D-1001TX

Electrical Characteristics

BASE SET

	for 25 channel	
	43.72 ~ 46.97	48.76 ~ 49.99
ANT-RX	30dB Min.	5dB Max.
TX-ANT	30dB Max.	30dB Min.
TX-RX	30dB Min.	

HAND SET

	for 25 channel	
	43.72 ~ 46.97	48.76 ~ 49.99
ANT-RX	5dB Max.	30dB Min.
TX-ANT	30dB Min.	5dB Max.
TX-RX		30dB Min.

TOKO

Helical Antennas
Dielectric Patch Antennas

CONTENTS

Flexible Helical Antennas
HEA Series 154

Dielectric Patch Antenna
DAC Series
Antenna for 2.4 GHz..... 156
DAK Series
Antenna for GPS 157

Helical Antenna for Cordless Phones

TOKO

HEA Series

Features

- 46/49MHz antenna suitable for 25 channel phone
- 900MHz antenna
- Available in 8 colors
- Flexible elastomer cover
- Most common connector styles available

Description

The HEA Series is a helical antenna suitable for 46/49MHz or 900MHz cordless phones and other wireless applications. The antenna features a flexible elastomer cover in a variety of colors.

PART NUMBERING CODE

HEA-□-□□-□ □-□□-□□□

- Toko internal control number. (Assigned by Toko)
- Connector code (see page 3 for connector options)
- Loading coils. Use Z in this space if no loading coil is used (See page 3)
- Spring options. Match to cover type selection (See page 2)
- Cover color code (See page 4)
- Cover type code (See page 2)

ANTENNA SELECTION

1. Please select the length/dimensions, color and mounting method required for your design.

2. If you wish to extend the receiving frequency range of your set under the same conditions, we recommend models with a loading coil.
   Since, Spring Coils will not be used enter a Z for Spring options.

EXAMPLE: 1 46/49MHz

HEA -S 01 - A Z - 15 - 001

- Toko control #
- Screw connector
- No loading coil
- A Type Spring
- Black Cover
- S Type Cover

EXAMPLE: 2 900MHz

HEA -1 01 - E Z - 20 - 000

- Toko control #
- Screw connector
- No loading coil
- E Type Spring
- Black Cover
- 1 Type Cover (900MHz)

SPECIFICATIONS

Electrical Characteristics

Range of resonant frequency	In accordance with individual specifications
Input impedance	50 Nominal
VSWR	2Max.
Insulation resistance	500M , Min./500VDC
Dielectric strength	1500VAC, 1 Minute
Wavelength	1/4λ

COLOR OPTIONS

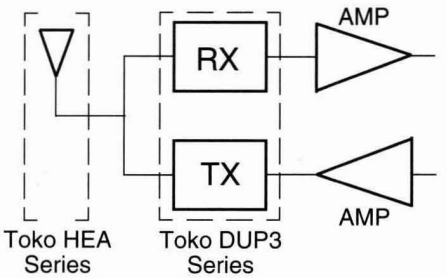
01	BLACK
02	GRAY
03	LIGHT GRAY
05	MILKY WHITE
06	NEW IVORY
07	DARK GRAY
14	WHITE GRAY
15	WARM GRAY

Mechanical Characteristics

Mounted strenght of connector: Axial direction Rotational	 49N (5kg), Min. 49N-cm (5kg-cm), Min.
Bending	1mm, Max.

CIRCUIT EXAMPLE

Cordless phone front end



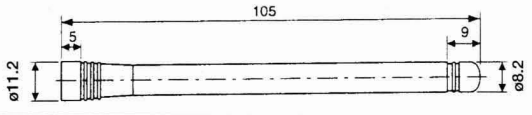
Environmental Characteristics

Temperature cycling	-10° C/+65° C, at 3 hr per cycle No electrical or mechanical defect to be detected
Operating temperature range	-20° C to +60° C
Storage temperature	-30° C to +80° C

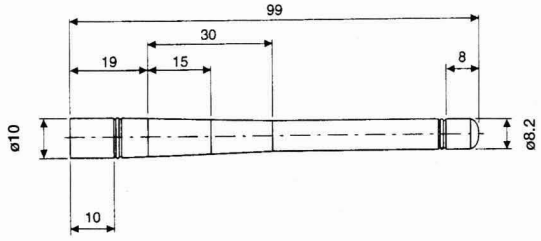
COVER TYPE OPTIONS

Basic selection Unit: mm

S

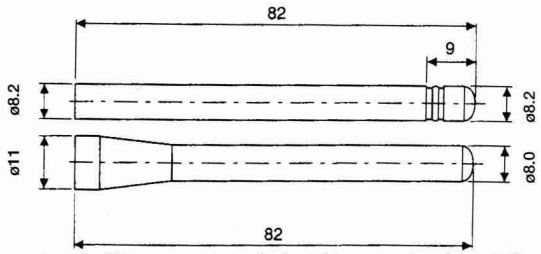


X



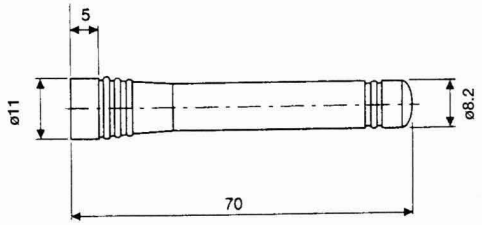
V

Z

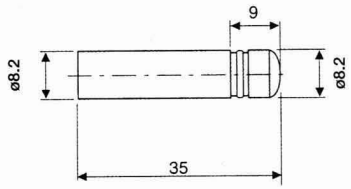


Connectors for Z type covers are designed to prevent spring rotation.

Y



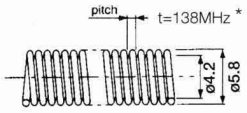
1



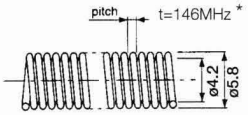
SPRING OPTIONS

Compulsory settings based on cover type

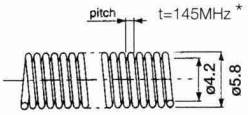
A



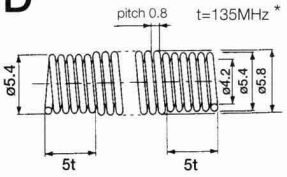
B



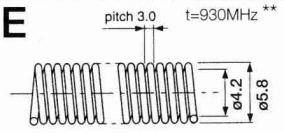
C



D



E



* For 46MHz Phone

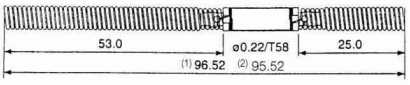
** For 900MHz Phone

LOADING COIL OPTIONS

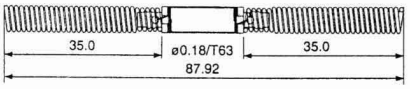
Limited Settings Unit: mm

1 (1) Cover L: 105mm (1)(46/49 LD 53.5MHz) (2)(46/49 LD 64.5MHz)

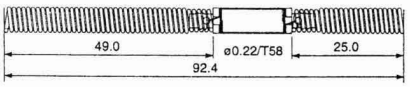
2 (2)



3 Cover L: 99mm (46/49 LD 51.5MHz)

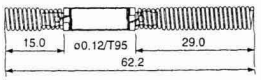


4 Cover L: 99mm (46/49 LD 54.7MHz)



No loading coil for cover options V & Z

5 Cover L: 70mm (31/39 LD 44.7MHz)

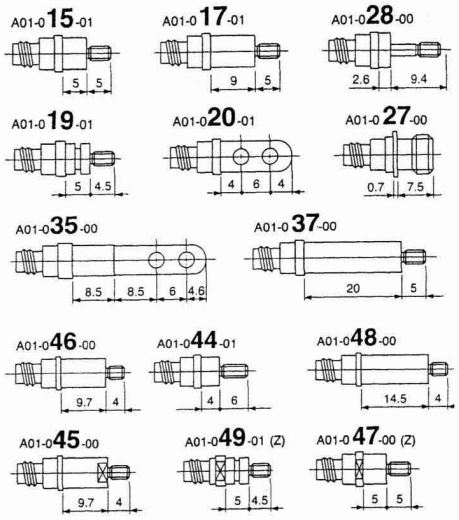


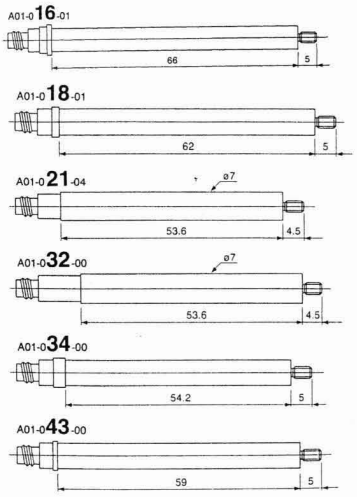
No loading coil for cover options 1

Unit: mm

CONNECTOR OPTIONS

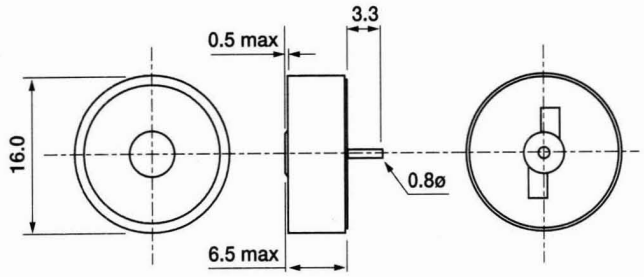
Options Unit: mm





Antenna Element for 2.4 GHz

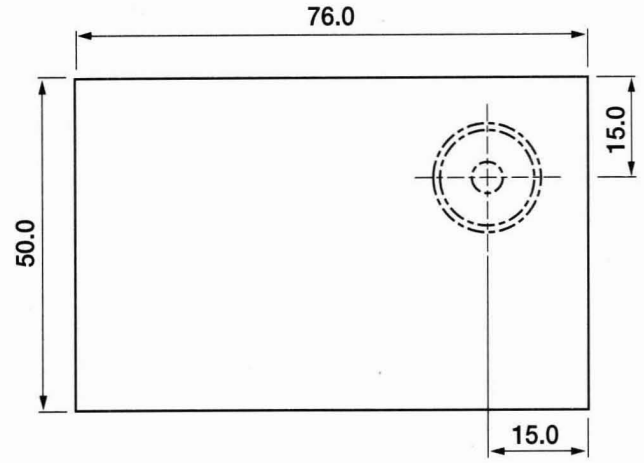
DAC Series



Features

- Vertical Polarization reception
- Low profile (6.5mm max)
- Omni-directional in azimuth
- Low interference design
- Central feeding point terminal
- Wide bandwidth
- Light weight

Mounted with ground Plane



Description

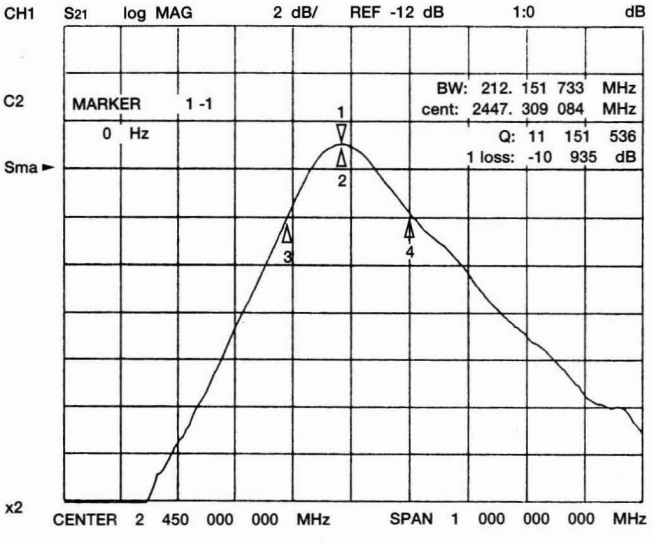
The DAC Series is a miniature dielectric antenna element for 2.4 GHz wireless LAN systems. This antenna has vertical polarization characteristics. TOKO's proprietary ceramic dielectric material provides excellent stability and sensitivity. It is mountable in Type II extended PCMCIA cards.

SPECIFICATIONS

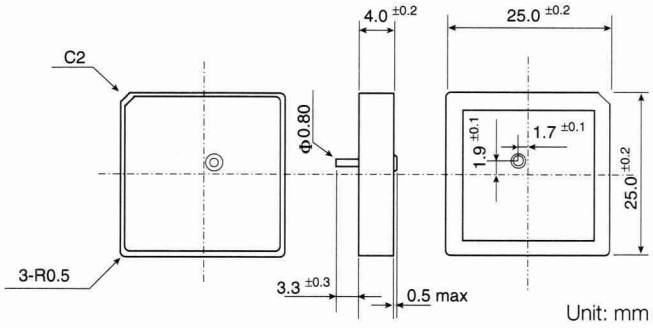
Part Number	DAC2450CT1
Center Frequency	2450 MHz
3dB Receiving Bandwidth	±50 MHz min.
Impedance	50
Peak Gain (Azimuth)	-4 dBi typ.
Peak Gain (Elevation)	0 dBi typ.
Operating Temperature	-10 ~ +60° C
Storage Temperature	-20 ~ +85° C

TYPICAL CHARACTERISTICS

Receiving Signal Response vs Frequency



DAK Series



Unit: mm

Features

- One quarter the size of traditional antenna elements without loss of sensitivity
- Excellent temperature stability via use of low temperature coefficient dielectric ceramics
- Silver plated electrode allows very good high frequency characteristics

Description

Toko's DAK Series is a miniature dielectric antenna element for Global Positioning Systems (GPS). This patch antenna has excellent stability and sensitivity through the use of high performance proprietary ceramic material well suited for GPS frequencies.

Element Construction

- Flat patch antenna
- Rectangular micro-strip antenna design
- Use for GPS C/A right hand circular polarization wave reception
- Offset one point feeding through ground plane method
- 25mm square size

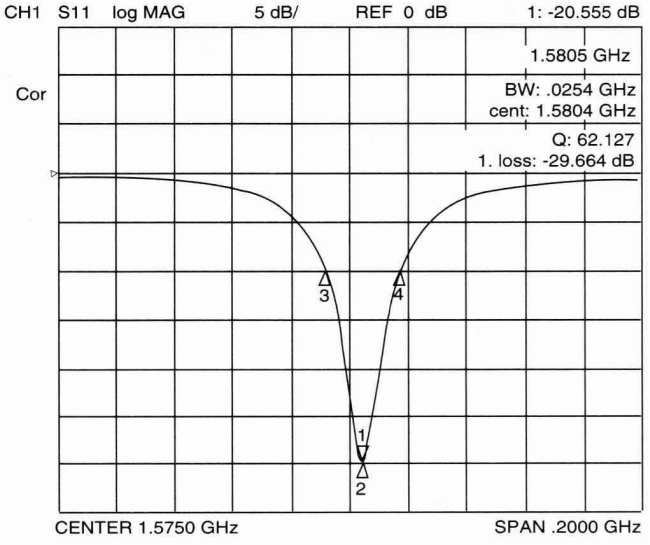
SPECIFICATIONS

Part Number	Outline Dimension	Ground Plane
DAK1575MS50	25 mm	70 x 70mm

Center Frequency	1580.5 MHz*
Bandwidth	9 MHz min.
Impedance	50Ω
Gain @ Zenith **Gain @ 10° Elevation**	+5 dBi typical -1 dBi typical
Temperature Coefficient	20 ppm/° C max.
*Center frequency is shifted 5MHz down when covered with a radome.	

TYPICAL CHARACTERISTICS

Part Number DAC1575MS50
with 70 x 70mm GND plane



TOKO

Audio LC Filters for Surface Mounting

Audio LC Filters

CONTENTS

Audio LC Filters for Surface Mounting

5FS 160

Audio LC Filters

5VH Series 161

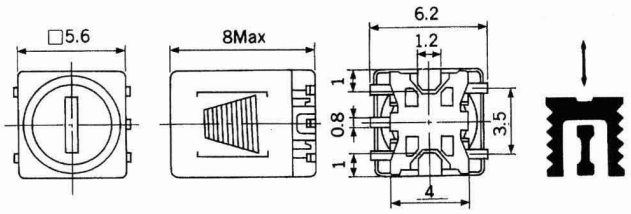
ABS/ABW/ABT Series 162

7PD 163

10PD 164

TYPE 5FS

For reflow soldering
Frequency Range: 10-200KHz
Inductance Range: 1~20mH
Optional Capacitance Values: -10°C~70°C



(Unit: mm)

Features

- Compact packages for surface mounting.
- Will take up to 2 built-in capacitors.
- Using three units together allows design of 7th order low pass filters.

Applications

- Ultra-compact audio frequency filters for use in portable video cameras.

STANDARD FILTERS SELECTION GUIDE

TYPE 5FS (LPF)

TOKO Part Number	Cut-off Frequency (KHz)	Pole Frequency (KHz)	I/O Impedance (Ω)	Notes
A375LAI-1017	13.5	15.73	1800/3900	LPF
A375LAI-1113	20	200	2000/3300	LPF
A375LAI-1107	30	70	2200/2700	LPF
A375LAI-1057	200	—	1000/1000	LPF

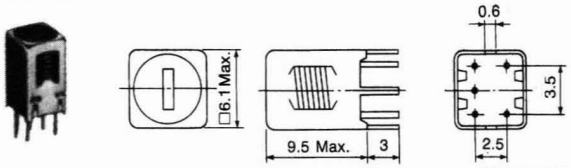
TYPE 5FS

TOKO Part Number	Inductance (mH)	Q (min.)	Test Frequency (KHz)	Tuning Inductance Range (%)
A375NCG-1081	1.0	60	252	±4
A375NCG-1082	1.2	60	252	±4
A375NCG-1083	1.5	60	252	±4
A375NCG-1084	1.8	60	252	±4
A375NCG-1085	2.2	60	252	±4
A375NCG-1086	2.7	60	252	±4
A375NCG-1087	3.3	60	252	±4
A375NCG-1088	3.9	60	252	±4
A375NCG-1089	4.7	60	252	±4
A375NCG-1090	5.6	60	252	±4
A375NCG-1091	6.8	60	252	±4
A375NCG-1092	8.2	60	252	±4
A375NCG-1093	10.0	40	79.6	±4
A375NCG-1094	12.0	40	79.6	±4
A375NCG-1095	15.0	40	79.6	±4
A375NCG-1096	18.0	40	79.6	±4
A375NCG-1097	20.0	40	79.6	±4

Audio Frequency LC Filters/5VH Series
5VHS Single, 5VHW Double, 5VHT Triple

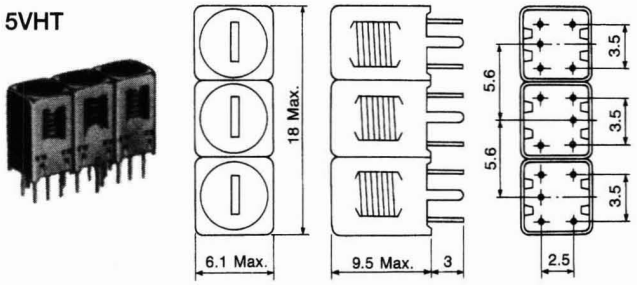
Frequency Range: 10-200KHz
Inductance Range: 0.05-15mH
Optional Capacitance Values: 10-8200pF
Q: 30

5VHS



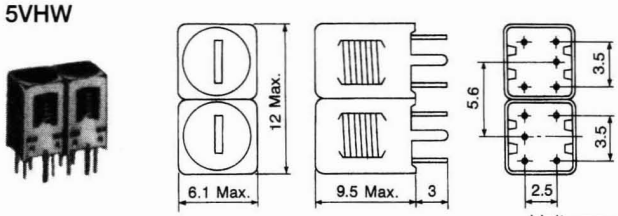
(Unit: mm)

5VHT



(Unit: mm)

5VHW



Unit: mm

Features

- Audio frequency lowpass filters based on 5mm square coil units. May be used single, double or triple. Ideal for miniaturization in portable video cameras.
- Small size but high inductance. Single, double or triple types available depending on application.

Applications

- Ideal for use in lowpass filters for portable video equipment.

STANDARD FILTERS SELECTION GUIDE

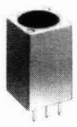
5VH Series

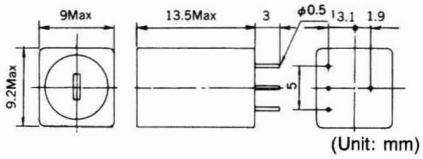
TOKO Part Number	Type	Cut-off Frequency (KHz)	1st Pole Frequency (KHz)	2nd Pole Frequency (KHz)	Input Impedance (Ω)	Output Impedance (Ω)
A329LBIS-0022AMAI	5VHS	12.5	15.73	53	2200	3300
A330LDKS-0068NZT	5VHW	12.5	15.62	65	1000	1500
TA331LTMS-0158IFG	5VHT	15	19	23	1000	6800

Low Frequency LC Filters
ABS07, ABW07, ABT07

Frequency Range: 10-200KHz
Inductance Range: 1-95mH
Optional Capacitance Values: 4-6800pF
Q: 100

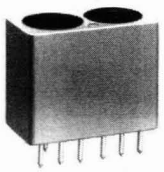
ABS07

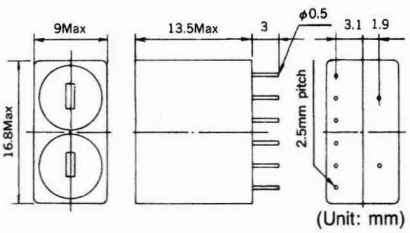




(Unit: mm)

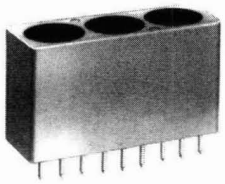
ABW07

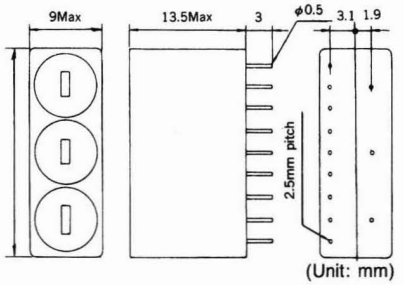




(Unit: mm)

ABT07





(Unit: mm)

Features

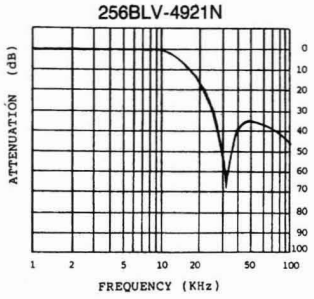
- Each unit, based on a 7mm square coil, will take up to 2 built-in capacitors.
- Usable frequency range of up to 200KHz for easy design of highpass, bandpass, and lowpass filters, equalizers, etc.
- Using three units together allows the construction of 7th order lowpass filters.

Applications

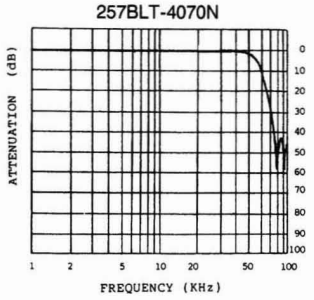
- Audio frequency filters for FM and MPX, Dolby systems, TV stereo sound, etc.

Frequency Characteristics

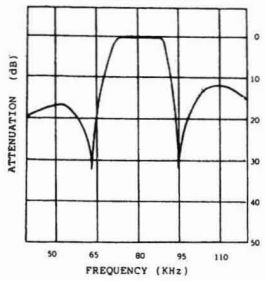
256BLV-4921N



257BLT-4070N



258BBV-4808N



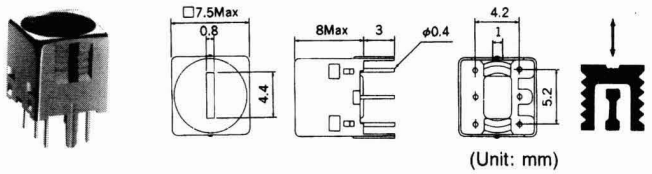
STANDARD FILTERS SELECTION GUIDE

ABS, ABW, ABT Series

TOKO Part Number	Type	BW or Fc (KHz) @ –3dB	BW or Fc (KHz) @ –35dB	I/O Impedance (Ω)	Notes
257BLR-3666N	ABW07	10.0	15.7	4700	10KHz LPF w/15.7KHz & 31.4KHz Trap
258BBV-4527N	ABT07	68.7/88.7		3300	78.67KHz BPF w/o Trap
A257BLT-4670N	ABW07	47.2	78.7	4700	50KHz LPF
258BBV-4808N	ABT07	68.7/88.7		3300	78.67KHz BPF
256BLV-4921N	ABS07	13.0	31.5	4700	13KHz LPF
For Duplex Television Sound					
257BLR-3666N	ABW07	10	15.7	4700	LPF w/15.7KHz & 31.4KHz Traps
257BLR-4580N	ABW07	12		4700	LPF w/15.7KHz & 31.4KHz Traps
258BBV-4527N	ABT07	68.7/88.7		3300	SAP BPF w/o Trap
258BBV-4808N	ABT07	68.7/88.7		3300	SAP BPF w/63 & 94 Traps
A257BLT-4670N	ABW07	47.2		4700	LPF w/78.6 & 94 Traps
For FM Stereo					
257BLR-3618N	ABW07	15		4700	LPF w/19 & 38 Traps
257BLRB-3811N	ABW07	13		3300	2CH LPF w/19 Traps
257BLR-3718N	ABW07	15		3300	LPF w/19 & 38 Traps
257BLR-3721N	ABW07	15		3300	LPF — For Dolby

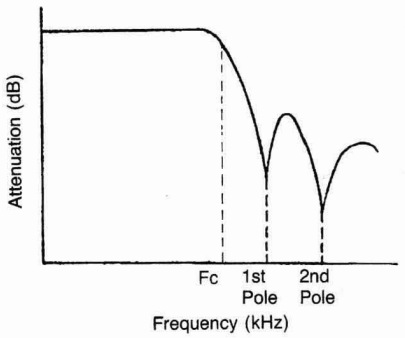
7PD Low Frequency LC Filters

Frequency Range: 10-200KHz
Inductance Range: 1-60mH
Optional Capacitance Values: 12-10,000pF



(Unit: mm)

Typical Pass Band Characteristics



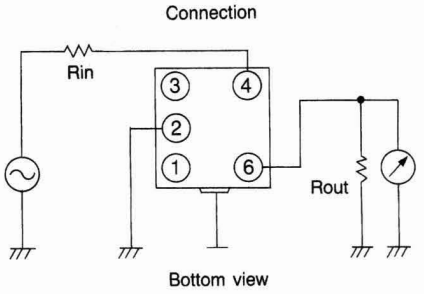
Features

- High impedance filters for audio frequency ranges.
- Will take up to 2 built-in capacitors, allowing 3rd order lowpass filter design.
- Shield case minimizes interference with other components.

Applications

- Suitable for Dolby filters or two-terminal type audio lowpass filters.

Test Circuit



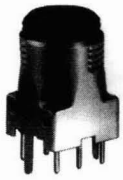
STANDARD FILTERS SELECTION GUIDE

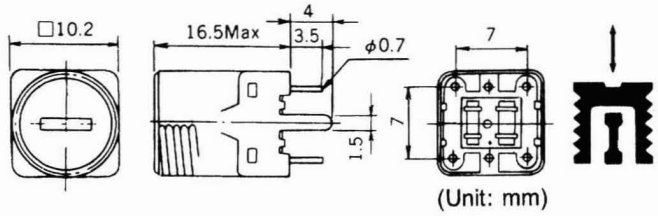
TYPE 7PD

TOKO Part Number	Cut-off Frequency (KHz)	1st Pole Frequency (KHz)	2nd Pole Frequency (KHz)	Input Impedance (Ω)	Output Impedance (Ω)
F388DJ-1020	12	15.73	70	1200	3900
F388DJ-1222	12	19	38	1200	4700
F388DJ-1229	70	114	190	5100	39000

10PD Low Frequency LC Filters

Frequency Range: 10-200KHz
Inductance Range: 1-55mH
Optional Capacitance Values: 5-6800pF





(Unit: mm)

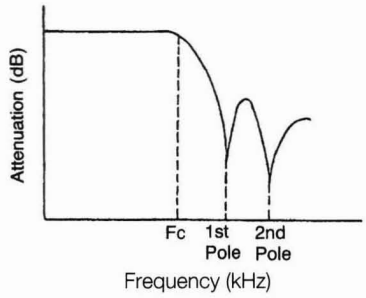
Features

- High impedance filter coils for audio band.
- Will take up to 2 built-in capacitors, allowing 3rd order lowpass filter design.
- Shield case minimizes interference with other components.

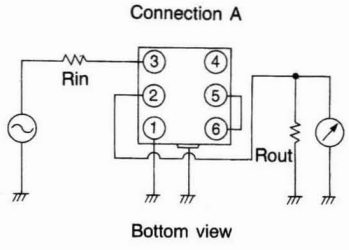
Applications

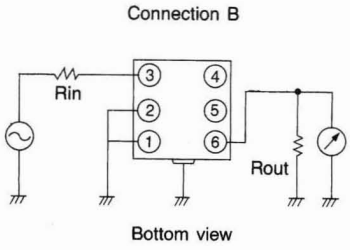
- Suitable for Dolby filters or two-terminal type audio lowpass filters.

Typical Pass Band Characteristics



Test Circuit





STANDARD FILTERS SELECTION GUIDE

TYPE 10PD

TOKO Part Number	Cut-off Frequency (KHz)	1st Pole Frequency (KHz)	2nd Pole Frequency (KHz)	Input Impedance (Ω)	Output Impedance (Ω)	Connection
253AGGS-1054	15	19	38	3300	3300	A
253AGGS-1076	12	15.73	31.46	2200	4700	A
253AGGS-1174	15	19	95	2200	4700	B

TOKO

Helical Filters

CONTENTS

Helical Filters for Surface Mounting

4CHW 166

5CHLW, 5CHW, 5CHT 167

Helical Filters, leaded

5HW, 5HT 169

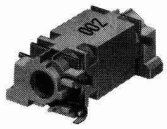
7HW, 7HT 171

CBW, CBT 173

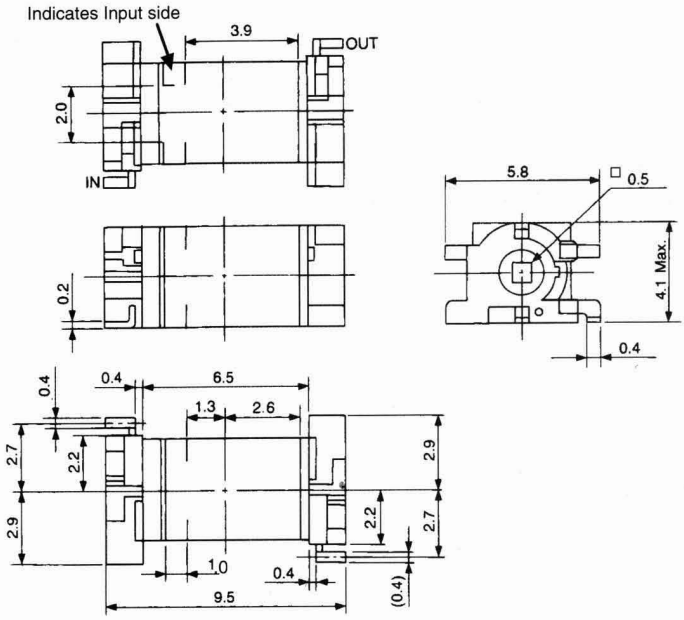
HRW, HRQ 176

4CHW
SMD Helical Filter

Frequency Range: 1.3 - 2.5 GHz



4CHW

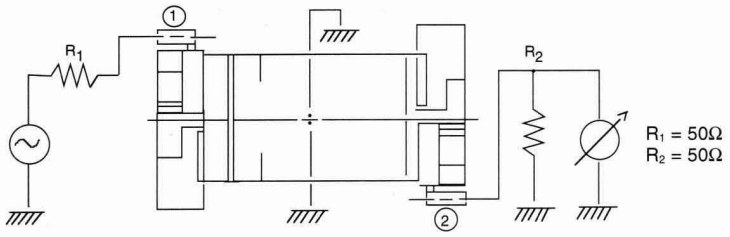


(Unit: mm)

Features

- Low insertion loss<2dB typical.
- Low Profile: ~ 4mm
- Available pre-set

Test Circuit
(bottom side view)



STANDARD FILTERS SELECTION GUIDE

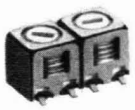
TYPE 4CHW

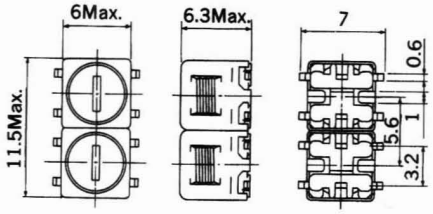
TOKO Part Number	Fo (MHz)	Bandwidth @ –1dB (MHz) min.	Insertion Loss (dB) max.	Selectivity Fo+400MHz (dB) min.	Selectivity Fo-400MHz (dB) min..	Impedance I/OΩ
669BB-1011	2450	Fo±50	3.0dB	17	19	50/50
669BB-1025	1900	Fo±25	3.5dB	24	30	50/50
669BB-1020	1890	Fo±25	3.5dB	24	30	50/50
669BB-1024	1842.5	Fo±37.5	3.5dB	21	28	50/50
669BB-1023	1747.5	Fo±37.5	3.5dB	23	32	50/50
669BB-1022	1659.6	Fo±25	3.5dB	25	36	50/50
669BB-1021	1506.5	Fo±37.5	3.5dB	21	29	50/50

5CHLW Double Tuned, 5CHW Double Tuned
5CHT Triple Tuned

Frequency Range: 5CHLW 780-1150MHz
5CHW, 5CHT 400-520MHz

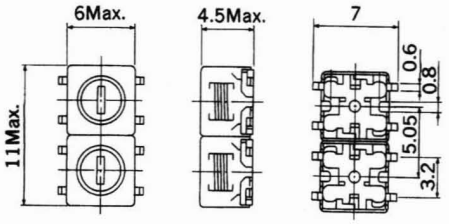
5CHW





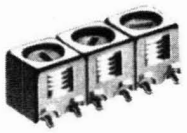
(Unit: mm)

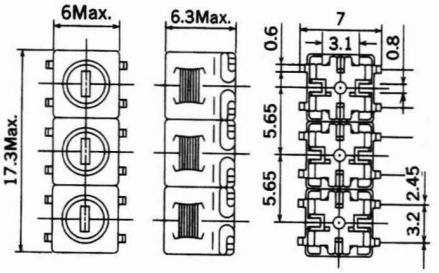
5CHLW



(Unit: mm)

5CHT





(Unit: mm)

Features

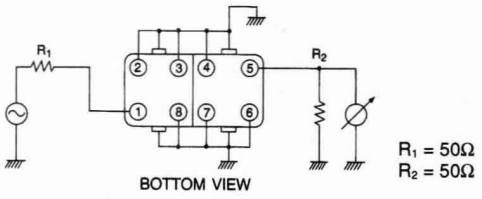
- Compact low-profile helical filters for surface mounting, ideal for mobile communications equipment.

Applications

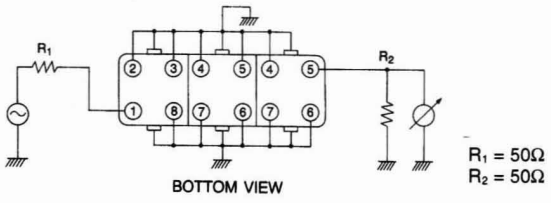
- Car phones, cordless telephones, paging devices, etc.

Test Circuits

5CHLW/5CHW



5CHT



STANDARD FILTERS SELECTION GUIDE

TYPE 5CHLW (Double Tuned)

TOKO Part Number	Center Frequency (MHz)	Bandwidth @ –1dB (MHz) min.	Selectivity Fo–100MHz (dB) min.	Selectivity Fo+100MHz (dB) min.	Ripple (dB) max.	Insertion Loss (dB) max.
477MS-1031A	832.5	25	25	18	1.0	2.5
477MS-1032A	850	25	25	17	1.0	2.5
477MS-1033A	870	25	25	18	1.0	2.5
477MS-1034A	902.5	25	24	18	1.0	2.5
477MS-1035A	915	25	25	18	1.0	2.5
477MS-1036A	933	25	25	18	1.0	2.5
477MS-1037A	947.5	25	25	18	1.0	2.5
477MS-1038A	950	25	22	17	1.0	2.5
477MS-1093A	836.5	25	25	18	1.0	2.5
477MS-1094A	881.5	25	25	18	1.0	2.5

continued on next page

continued from previous page

STANDARD FILTERS SELECTION GUIDE

TYPE 5CHW (Double Tuned)

TOKO Part Number	Center Frequency (MHz)	Bandwidth @ –1dB (MHz) (dB) min.	Selectivity Fo–50MHz (dB) min.	Selectivity Fo+50MHz (dB) min.	Ripple (dB) max.	Insertion Loss (dB) max.
492S-1051A	420	10	14	20	0.5	3.0
492S-1052A	425	10	14	20	0.5	3.0
492S-1053A	427	10	14	20	0.5	3.0
492S-1054A	430	10	14	20	0.5	3.5
492S-1055A	435	10	14	20	0.5	3.5
492S-1056A	440	10	13	18	0.5	3.5
492S-1057A	450	10	12	17	0.5	3.5
492S-1058A	452	10	12	17	0.5	3.5
492S-1059A	456	10	12	16	0.5	3.5
492S-1060A	460	10	12	16	0.5	3.5
492S-1061A	463.5	10	12	16	0.5	3.5
492S-1062A	465	10	12	16	0.5	3.5
492S-1063A	470	10	12	15	0.5	3.5
492S-1064A	480	10	12	15	0.5	3.5
492S-1065A	510	10	12	15	0.5	3.5

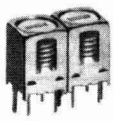
TYPE 5CHT (Triple Tuned)

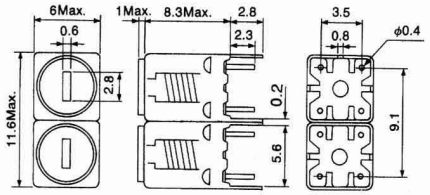
TOKO Part Number	Center Frequency (MHz)	Bandwidth @ –1dB (MHz) (dB) min.	Selectivity Fo–50MHz (dB) min.	Selectivity Fo+50MHz (dB) min.	Ripple (dB) max.	Insertion Loss (dB) max.
493S-1066A	395	10	33	33	0.5	4.5
493S-1067A	420	10	30	30	0.5	4.5
493S-1068A	425	10	30	30	0.5	4.5
493S-1069A	430	10	30	30	0.5	4.5
493S-1070A	435	10	30	30	0.5	4.5
493S-1071A	440	10	27	27	0.5	4.5
493S-1072A	450	10	27	27	0.5	4.5
493S-1073A	452	10	27	27	0.5	4.5
493S-1074A	456	10	27	27	0.5	4.5
493S-1075A	460	10	27	27	0.5	4.5
493S-1076A	465	10	27	27	0.5	4.5
493S-1077A	470	10	27	27	0.5	4.5
493S-1078A	480	10	26	26	0.5	4.5
493S-1079A	485	10	26	26	0.5	4.5
493S-1080A	510	10	25	25	0.5	4.5

5HW Double Tuned
5HT Triple Tuned

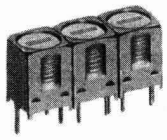
Frequency Range: 5HW, 5HT 350-1500MHz

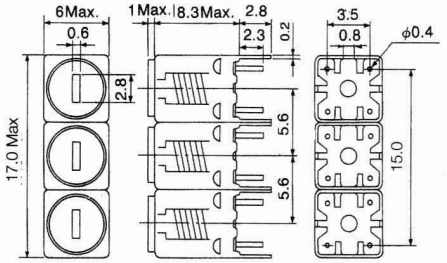
5HW





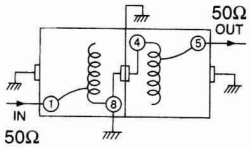
5HT





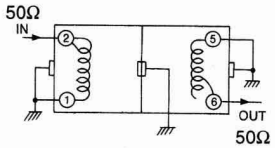
(Unit: mm)

"A" CONNECTIONS



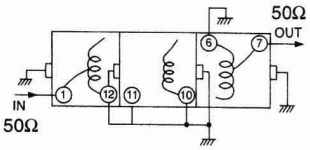
BOTTOM VIEW

"F" CONNECTIONS

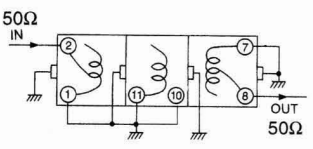


BOTTOM VIEW

"F" CONNECTIONS

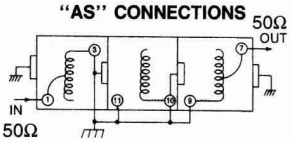


"C" CONNECTIONS

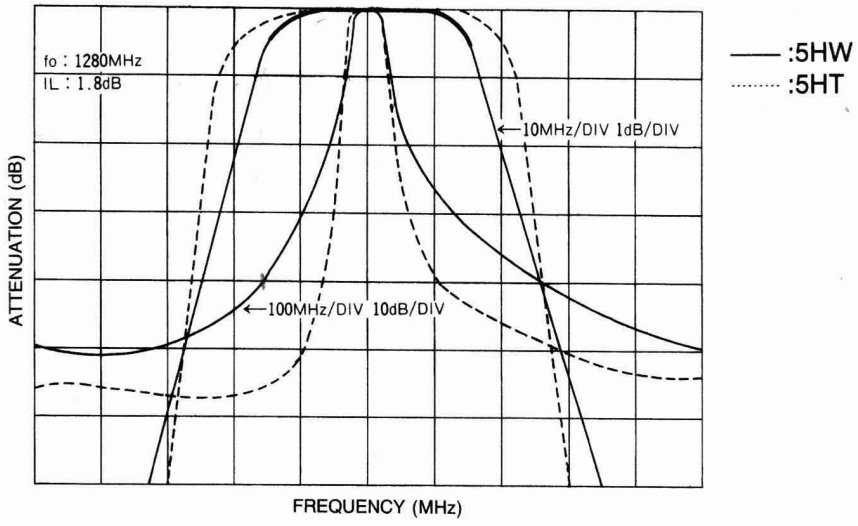


BOTTOM VIEW

"AS" CONNECTIONS



Characteristic



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STANDARD FILTERS SELECTION GUIDE

TYPE 5HW (Double Tuned)

TOKO Part Number	Center Frequency (MHz)	Bandwidth @ –1dB (MHz) min.	Selectivity Fo–( )MHz (dB) min.	Selectivity Fo+( )MHz (dB) min.	Ripple (dB) max.	Insertion Loss (dB) max.
5HW-35045A-365	365	6.0	25(50)	20(50)	1.0	4.5
5HW-36535A-380	380	7.0	25(50)	20(50)	1.0	4.5
5HW-39545A-425	425	7.0	25(50)	20(50)	1.0	4.5
5HW-40545A-430	430	7.0	25(50)	20(50)	1.0	4.5
5HW-44545A-475	475	8.0	22(50)	18(50)	1.0	4.5
5HW-47535A-505	505	10.0	20(50)	16(50)	1.0	4.5
5HW-51035A-530	530	10.0	20(50)	16(50)	1.0	4.5
5HW-52535A-545	545	10.0	20(50)	16(50)	1.0	4.5
5HW-58080A-625	625	10.0	18(50)	15(50)	1.0	4.5
5HW-65535A-670	670	14.0	26(100)	23(100)	1.0	3.5
5HW-94555A-959	959	18.0	20(100)	17(100)	1.0	3.5
5HW-100090A-1010	1010	16.0	18(100)	14(100)	1.0	3.5
5HW-109060A-1130	1130	18.0	16(100)	14(100)	1.0	3.5
5HW-115045F-1195	1195	24.0	20(100)	18(100)	1.0	3.5
5HW-120050F-1225	1225	18.0	24(100)	20(100)	1.0	3.5
5HW-125055F-1305	1305	25.0	20(100)	18(100)	1.0	3.5

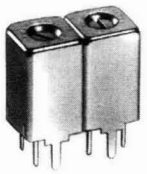
TYPE 5HT (Triple Tuned)

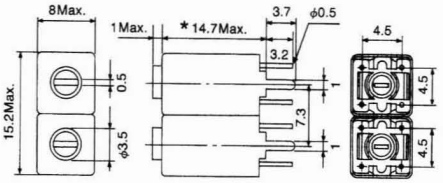
TOKO Part Number	Center Frequency (MHz)	Bandwidth @ –1dB (MHz) min.	Selectivity Fo–50MHz (dB) min.	Selectivity Fo+50MHz (dB) min.	Ripple (dB) max.	Insertion Loss (dB) max.
5HT-36020AS-360	360	16.0	33	25	1.0	4.0
5HT-38020AS-380	380	16.0	28	24	1.0	4.0
5HT-40020AS-400	400	11.0	34	31	1.0	4.0
5HT-42020AS-420	420	13.0	32	27	1.0	4.0
5HT-44020AS-440	440	14.0	28	25	1.0	4.0
5HT-46020AS-460	460	14.0	28	23	1.0	4.0
5HT-48030AS-480	480	14.0	26	22	1.0	4.0
5HT-49520AS-495	495	15.0	26	22	1.0	4.0
5HT-51535AS-515	515	16.0	25	20	1.0	4.0
5HT-52070AS-520	520	9.0	25	22	1.0	4.0
5HT-59065F-590	590	12.0	34	25	1.0	4.5
5HT-63540F-635	635	12.0	30	26	1.0	4.0
5HT-65550F-655	655	12.0	30	26	1.0	4.0
5HT-70530F-705	705	15.0	30	26	1.0	4.0
5HT-73565F-735	735	15.0	28	24	1.0	4.0
5HT-80030F-800	800	15.0	28	24	1.0	4.0
5HT-83050F-830	830	15.0	26	22	1.0	4.0
5HT-88065F-880	880	15.0	24	20	1.0	4.0
5HT-94535F-945	945	15.0	22	18	1.0	4.0
5HT-98030F-980	980	15.0	22	18	1.0	4.0
5HT-101045F-1010	1010	15.0	18	14	1.0	4.0
5HT-105535F-1055	1055	15.0	18	14	1.0	4.0
→ 5HT-109065F-1090	1090	15.0	17	15	1.0	4.0
5HT-112570C-1125	1125	15.0	20	18	1.0	4.5
5HT-123080C-1230	1230	15.0	20	16	1.0	4.5

7HW Double Tuned
7HT Triple Tuned

Frequency Range: 350MHz-1.0GHz

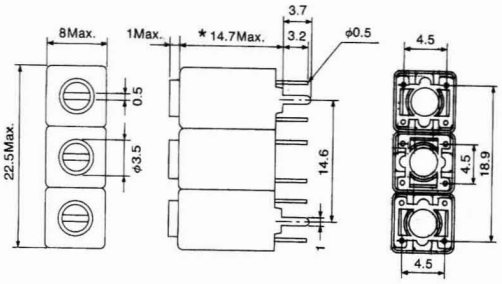
7HW





(Unit: mm)

7HT



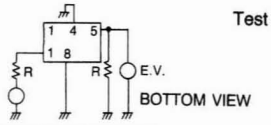
* Either 11 or 12.9mm height is possible.

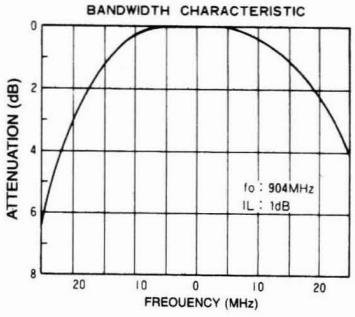
(Unit: mm)

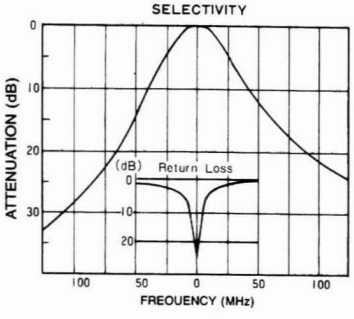
Examples of 900MHz Frequency Response

252HXPK-2709F

Test Circuit

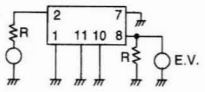


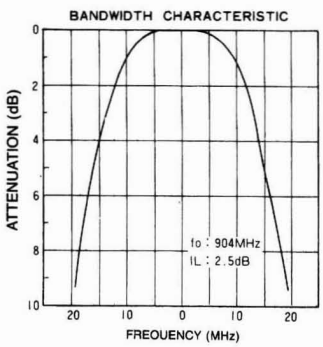


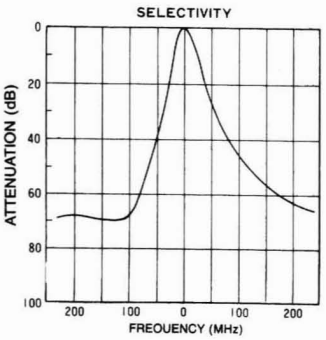


302HXPK-1278B

Test Circuit

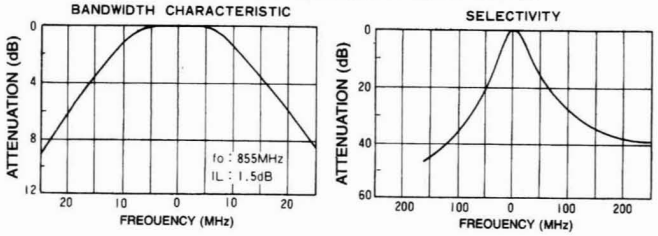




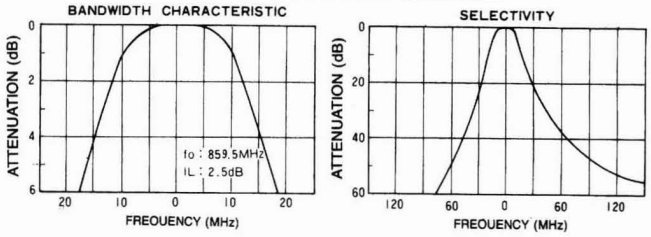


Typical Characteristic for MCA Radios

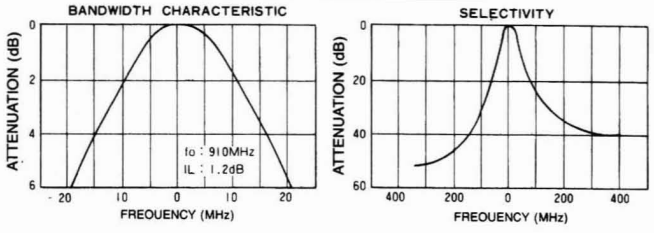
ANTENNA CIRCUIT FILTER 302MXPR-1077E



RF CIRCUIT FILTER 252HXPK-2674F



LOCAL FILTER 252HXPK-2737F



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STANDARD FILTERS SELECTION GUIDE

TYPE 7HW (Double Tuned)

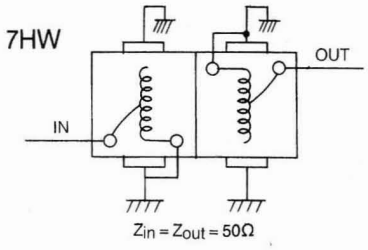
TOKO Part Number	Center Frequency (MHz)	Bandwidth @ –1dB (MHz) min.	Selectivity Fo–50MHz (dB) min.	Selectivity Fo+50MHz (dB) min.	Ripple (dB) max.	Insertion Loss (dB) max.
7HW-35515A-360	360	7.0	35	25	0.5	3.0
7HW-36020A-370	370	7.0	35	25	0.5	3.0
7HW-37020A-380	380	7.0	35	20	0.5	3.0
7HW-38025A-390	390	7.0	28	20	0.5	3.0
7HW-39525A-410	410	7.0	25	18	0.5	3.0
7HW-40525A-420	420	8.0	25	18	0.5	3.0
7HW-42025A-435	435	8.0	25	18	0.5	3.0
7HW-43525A-450	450	8.0	25	18	0.5	3.0
7HW-45025A-460	460	8.0	20	16	0.5	3.0
7HW-46025A-475	475	8.0	20	16	0.5	3.0
7HW-47530A-490	490	10.0	18	14	0.5	3.0
7HW-49030A-505	505	10.0	18	14	0.5	3.0
7HW-51030A-525	525	10.0	14	12	0.5	3.0

TYPE 7HT (Triple Tuned)

TOKO Part Number	Center Frequency (MHz)	Bandwidth @ –1dB (MHz) min.	Selectivity Fo–( )MHz (dB) min.	Selectivity Fo+( )MHz (dB) min.	Ripple (dB) max.	Insertion Loss (dB) max.
302MXPR-1138D	370	* 6.0	35(30)	30(30)	1.0	4.5
302MXPR-1137D	390	* 7.0	30(30)	25(30)	1.0	4.0
302MXPR-1136D	410	* 8.0	30(30)	25(30)	1.0	3.5
302MXPR-1109D	415	13.0	40(50)	30(50)	1.0	3.5
302MXPR-1110D	465	12.0	40(50)	30(50)	1.0	4.0
302MXPR-1108D	500	13.0	36(50)	27(50)	1.0	3.5
302MXPR-1119D	680	10.0	43(50)	34(50)	1.0	4.5
302HXPK-1111B	833	*18.0	30(50)	23(50)	1.0	4.0

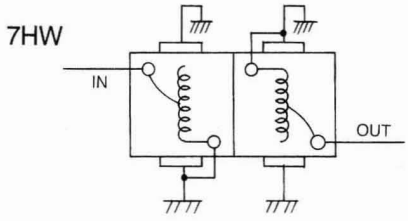
* Bandwidth @–3dB

"A" CONNECTIONS



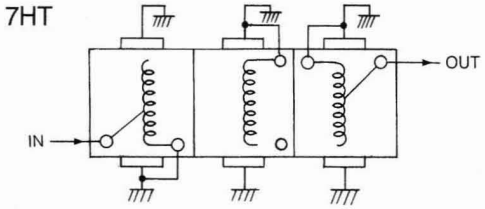
$Z_{in} = Z_{out} = 50\Omega$

"F" CONNECTIONS



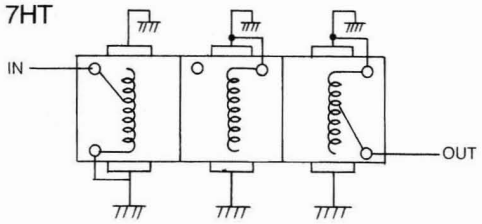
$Z_{in} = Z_{out} = 50\Omega$

"D" CONNECTIONS



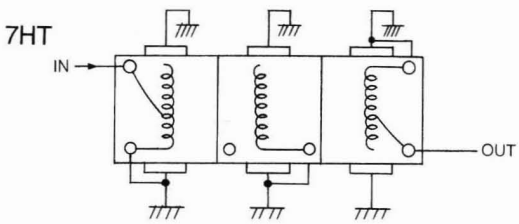
$Z_{in} = Z_{out} = 50\Omega$

"B" CONNECTIONS



$Z_{in} = Z_{out} = 50\Omega$

"E" CONNECTIONS



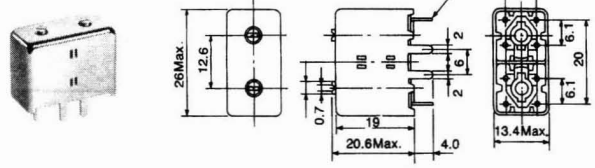
$Z_{in} = Z_{out} = 50\Omega$

(BOTTOM VIEW)

CBW Double Tuned
CBT Triple Tuned

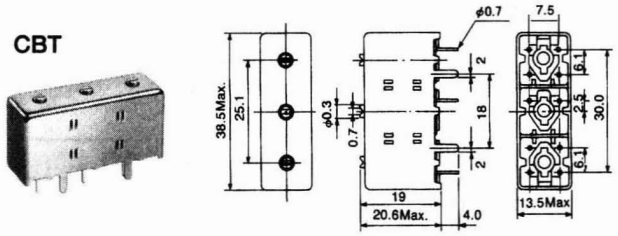
Frequency Range: 130-220MHz

CBW



Unit: mm

CBT

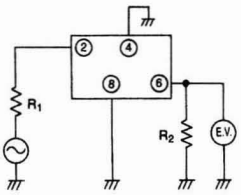


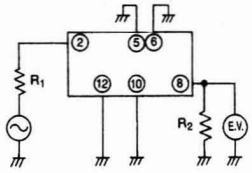
Unit: mm

Examples of Electrical Characteristics

Item \ Type		CBW	CBT
Center Frequency		145MHz	145MHz
Bandwidth, at 1dB		3MHz	3MHz
Attenuation	fo + 10MHz	20dB	28dB
	fo – 10MHz	22dB	35dB
Ripple		0.3dB	0.5dB
Insertion Loss		1.3dB	2dbB
Impedance		50Ω	50Ω

Test Circuits (Bottom View)

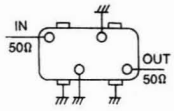




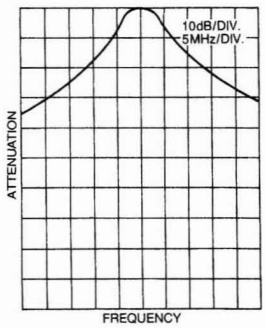
Note: Case lugs must be grounded.

Characteristics

271MT-1162A

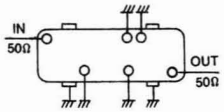


BOTTOM VIEW

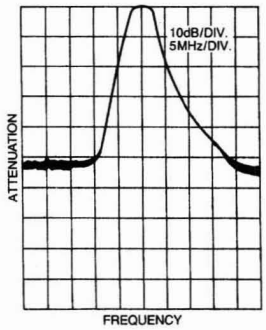


Fo=171MHz

272MT-1119D

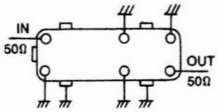


BOTTOM VIEW

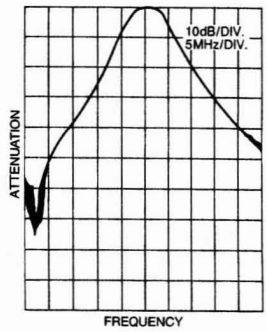


Fo=143MHz

272MT-1125D



BOTTOM VIEW



Fo=171MHz

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STANDARD FILTERS SELECTION GUIDE

TYPE CBW (Double Tuned)

TOKO Part Number	Center Frequency (MHz)	Bandwidth @ –1dB (MHz) min.	Selectivity Fo–15MHz (dB) min.	Selectivity Fo+15MHz (dB) min.	Ripple (dB) max.	Insertion Loss (dB) max.
271MT-1149A	99	3.0	30	20	1.0	3.0
271MT-1150A	103	3.0	30	20	1.0	2.5
271MT-1151A	107.5	3.0	30	20	0.5	2.5
271MT-1152A	111	3.0	30	20	0.5	2.5
271MT-1153A	115	2.0	32	22	0.5	2.5
271MT-1154A	119	2.5	30	22	0.5	2.0
271MT-1155A	122	2.0	29	27	0.5	2.5
271MT-1156A	126	3.0	25	24	0.5	2.5
271MT-1157A	131	3.0	24	23	0.5	2.5
271MT-1158A	138	2.0	28	24	0.5	2.5
271MT-1159A	146	2.5	27	23	0.5	2.5
271MT-1160A	154	2.5	25	21	0.5	2.5
271MT-1161A	164	2.5	28	25	0.5	3.0
271MT-1162A	171	2.5	20	18	0.5	2.5
271MT-1163A	182.5	3.0	23	20	0.5	3.0
271MT-1164A	194.5	2.5	27	24	0.5	3.0
271MT-1165A	207.5	2.5	26	23	0.5	3.0
271MT-1166A	220	2.0	20	18	0.5	3.0

TYPE CBT (Triple Tuned)

TOKO Part Number	Center Frequency (MHz)	Bandwidth (MHz) min.	Selectivity Fo–( )MHz (dB) min.	Selectivity Fo+( )MHz (dB) min.	Ripple (dB) max.	Insertion Loss (dB) max.
272MT-1173A	100	4.0 (BW3)	30 (15)	30 (15)	1.0	4.0
272MT-1230D	107	3.0 (BW3)	33 (10)	22 (15)	1.0	4.5
272MT-1180A	110	3.0 (BW3)	37 (10)	30 (10)	1.0	5.5
272MT-1177D	124	3.5 (BW3)	21 (6)	17 (6)	1.0	3.5
272MT-1175D	130	3.0 (BW3)	21 (5)	18 (5)	1.0	5.5
272MT-1176D	133.7	3.5 (BW3)	23 (6)	18 (6)	1.0	3.5
272MT-1116A	134	5.0 (BW1)	24 (15)	24 (15)	1.0	3.0
272MT-1169D	137.5	2.0 (BW1)	35 (10)	30 (10)	1.0	4.5
272MT-1117D	140.21	3.7 (BW1)	26 (10)	25 (10)	1.0	3.0
272MT-1119D	143	3.0 (BW1)	35 (10)	22 (10)	1.0	4.0
272MT-1006A	145	2.8 (BW3)	25 (6)	25 (6)	5.0	8.0
272MT-1008A	145	1.2 (BW3)	30 (6)	30 (6)	5.0	8.0
272MT-1181D	147	4.0 (BW3)	20 (6)	15 (6)	1.0	3.5
272MT-1219A	156.7	1.5 (BW3)	33 (6)	25 (6)	1.0	7.0
272MT-1124D	157	3.5 (BW3)	17 (6)	13 (6)	1.0	3.5
272MT-1174A	159	7.0 (BW3)	35 (20)	33 (20)	1.0	3.0
272MT-1123A	160	2.0 (BW3)	17 (5)	15 (5)	1.0	6.0
272MT-1221A	161	2.2 (BW1)	32 (10)	40 (10)	1.0	4.5
272MT-1218A	161.3	1.5 (BW3)	30 (6)	25 (6)	1.0	7.0
272MT-1148A	164	1.0 (BW3)	30 (5)	25 (5)	1.0	8.5

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STANDARD FILTERS SELECTION GUIDE

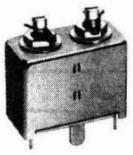
TYPE CBT (Triple Tuned)

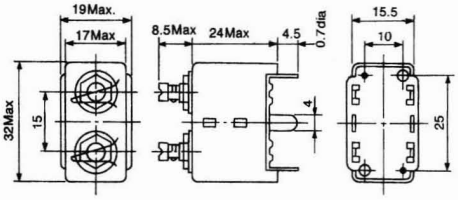
TOKO Part Number	Center Frequency (MHz)	Bandwidth (MHz) min.	Selectivity Fo–( )MHz (dB) min.	Selectivity Fo+( )MHz (dB) min.	Ripple (dB) max.	Insertion Loss (dB) max.
272MT-1118D	165	3.9 (BW1)	15 (10)	16 (10)	1.0	3.0
272MT-1120A	169	3.5 (BW3)	35 (10)	25 (10)	1.0	6.0
272MT-1125D	171	4.4 (BW1)	16 (10)	14 (10)	1.0	2.5
272MT-1126F	177	4.0 (BW1)	15 (10)	13 (10)	1.0	3.0
272MT-1127F	183	4.0 (BW1)	17 (10)	17 (10)	1.0	3.0
272MT-1131A	185	3.0 (BW3)	24 (6)	20 (6)	1.0	5.0
272MT-1128F	189	4.0 (BW1)	19 (10)	18 (10)	1.0	3.5
272MT-1208A	194.5	3.0 (BW3)	40 (15)	35 (15)	1.0	4.5
272MT-1129F	195	4.2 (BW1)	18 (10)	18 (10)	1.0	3.0
272MT-1182A	196	3.0 (BW3)	32 (10)	25 (10)	1.0	5.0
272MT-1195A	200	3.0 (BW3)	19 (6)	17 (6)	1.0	7.0
272MT-1130F	201	4.5 (BW1)	16 (10)	16 (10)	1.0	3.0
272MT-1132A	215	4.0 (BW3)	15 (6)	14 (6)	1.0	4.0
272MT-1209A	220	5.0 (BW3)	40 (15)	30 (15)	1.0	4.5
272MT-1146A	223	4.0 (BW3)	24 (10)	18 (10)	1.0	4.5
272MT-1188A	226.4	2.5 (BW1)	32 (10)	25 (10)	1.0	6.0
272MT-1013A	170	1.5 (BW3)	25 (6)	25 (6)	5.0	8.0
272MT-1007A	170	1.0 (BW1)	31 (5)	30 (5)	5.0	9.0
272MT-1080A	223	2.6 (BW1)	28 (10)	40 (20)	5.0	6.0

HRW Double Tuned
HRQ Quadruple Tuned

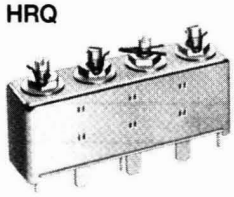
Frequency Range: 350-520MHz

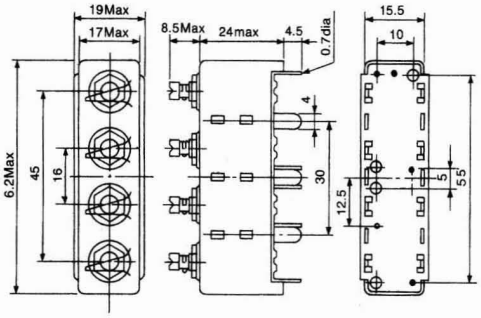
HRW





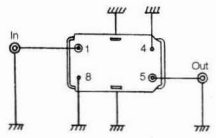
HRQ





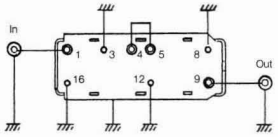
Test Circuits

HRW



(Bottom view)

HRQ

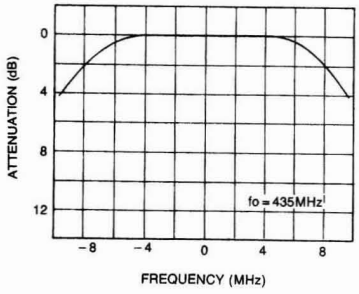


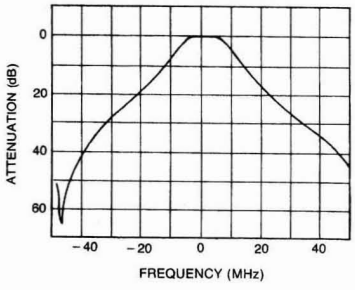
(Bottom view)

Note: Case lugs must be grounded

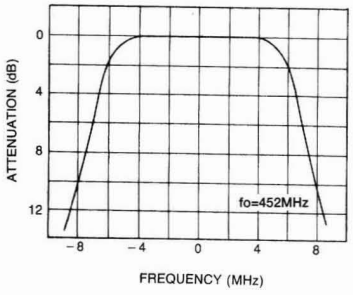
Characteristics

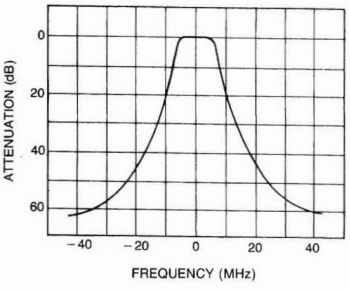
231MT-1001A





232MT-1009A





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STANDARD FILTERS SELECTION GUIDE

TYPE HRW (Double Tuned)

TOKO Part Number	Center Frequency (MHz)	Bandwidth @ –1dB (MHz) min.	Selectivity Fo+20MHz (dB) min.	Selectivity Fo–20MHz (dB) min.	Ripple (dB) max.	Insertion Loss (dB) max.	Approximate Tuning Range (MHz)
231MT-1033A	387.5	3.5	18	23	1.0	3.0	380-400
231MT-1032A	407.5	4.0	19	22	1.0	2.5	400-420
231MT-1031A	427.5	5.0	12	15	1.0	2.0	420-430
			Fo+30MHz	Fo–30MHz			
231MT-1018A	432.5	3.5	21	28	1.0	4.5	430-450
231MT-1026A	457.5	4.0	21	25	1.0	4.0	450-470
231MT-1027A	477.5	4.0	21	25	1.0	4.0	470-490
231MT-1028A	497.5	4.0	18	25	1.0	4.0	490-512

TYPE HRQ (Quadruple Tuned)

TOKO Part Number	Center Frequency (MHz)	Bandwidth @ –3dB (MHz) min.	Selectivity Fo+15MHz (dB) min.	Selectivity Fo–15MHz (dB) min.	Ripple (dB) max.	Insertion Loss (dB) max.	Approximate Tuning Range (MHz)
232MT-1023A	407.5	7.5	33	33	3.0	7.5	400-420
232MT-1024A	427.5	7.0	33	33	2.0	4.0	420-430
232MT-1051A	440.0	10.0	23	25	2.0	3.5	430-450
232MT-1009A	452.5	12.0	21	25	2.0	3.5	450-470
232MT-1013A	477.5	10.0	20	23	3.0	3.5	470-490
232MT-1014A	497.5	12.0	15	20	3.0	3.5	490-512

TOKO

Balun Transformers
90° Phase Shifter

CONTENTS

Balun Transformers for Surface Mounting

B4F, B4FL 180

B5F, B5FL 181

Balun Transformers

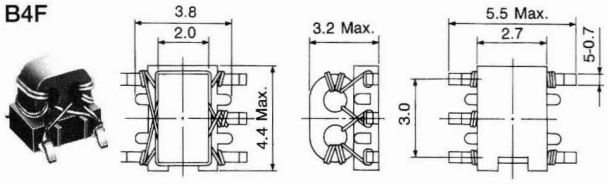
B7T 182

90° Phase Shifter

B4QF 183

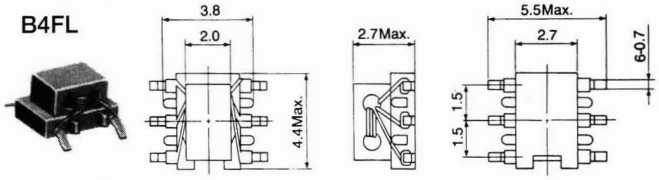
TYPE B4F: Surface Mount
TYPE B4FL: Surface Mount

B4F



Unit: mm

B4FL



Unit: mm

Features

- Pair wire coil for high stability.
- Base pin terminal treated, allowing mounting 'as is' on a PCB.

Applications

- Double balance mixers, broad-band transformers, impedance transformers, etc.
- The following application notes are available from Toko America - Balun Transformers as Directional Couplers
  - Balun Transformers for Mixers, Frequency Multipliers, and Broadband Impedance Matching
  - Balun Transformers for Power Combining and Signal Splitting

STANDARD TRANSFORMERS SELECTION GUIDE

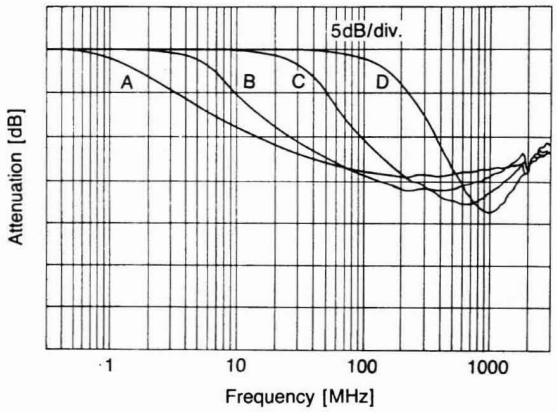
TYPE B4F

TOKO Part Number	Number of Turns per Winding	Operating Frequency Range (MHz)	Insertion Loss (dB)	Fig.
Double Balanced Mixer				
617DB-1007	2	25 ~2000	3	1
617DB-1009	3	6 ~2000	3	1
617DB-1006	3	150 ~2300	3	1
617DB-1010	4	3.5 ~2000	3	1
617DB-1018	5	2 ~2000	3	1
Frequency Mixer				
617PT-1025	1	—		2
617PT-1019	2	8 ~ 750	3	2
617PT-1026	3	3.5 ~ 700	3	2
Balun Transformer				
617DB-1021	1½	20 ~ 750	3	3
617DB-1022	2½	4.5 ~3300	3	3
617DB-1023	3½	2.3 ~2700	3	3
617DB-1024	4½	1.5 ~2400	3	3
Power Divider/Combiners				
617DS-1079	2	1300 ~1700	IN to OUT-1,2 4.5dB max.	5
617DS-1076	3	800 ~1000	IN to OUT-2 (ISOLATION) 15dB min.	5
Splitter/Directional Coupler				
617PS-1056	6	5 ~1000	IN to OUT 1: 0.5dB IN to OUT 2: 16dB	7

TYPE B4FL

TOKO Part Number	Rated D.C. Current (40°C)	Characteristics
For Two Line		
844CM-1010	0.71A Typ.	A
844CM-1009	0.71A Typ.	B
844CM-1012	0.71A Typ.	C
844CM-1011	0.71A Typ.	D
For Four Line		
844CM-1014	0.71A Typ.	A
844CM-1013	0.71A Typ.	B
844CM-1016	0.71A Typ.	C
844CM-1015	0.71A Typ.	D
(Two Line) Common mode filter for power supplies		
844CM-1021	1.44A Typ.	-
844CM-1022	0.94A Typ.	-

Typical Characteristics (B4FL)



Pin Connections

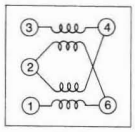


Fig. 1

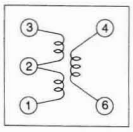


Fig. 2

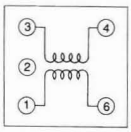


Fig. 3

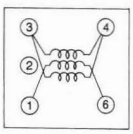


Fig. 4

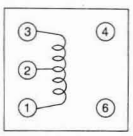
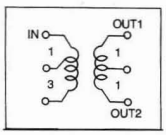
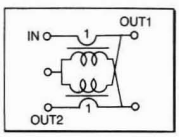


Fig. 5



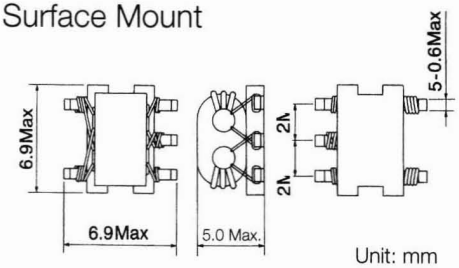
Distributor / Fig. 6



Directional Coupler / Fig. 7

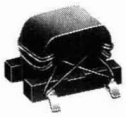
TYPE B5F: Surface Mount
TYPE B5FL: Surface Mount

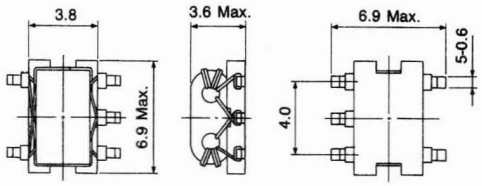
B5F



Unit: mm

B5FL





Unit: mm

Features

- Pair wire coil for high stability.
- Base pin terminal treated, allowing mounting 'as is' on a PCB.

Applications

- Double balance mixers, broad-band transformers, impedance transformers, etc.
- The following application notes are available from Toko America - Balun Transformers as Directional Couplers
  - Balun Transformers for Mixers, Frequency Multipliers, and Broadband Impedance Matching
  - Balun Transformers for Power Combining and Signal Splitting

STANDARD TRANSFORMERS SELECTION GUIDE

TYPE B5F

TOKO Part Number	Number of Turns per Winding	Operating Frequency Range	Insertion Loss	Fig.
Double Balanced Mixer				
458DB-1012	1	50MHz~400MHz	10dB max.	1
458DB-1013	2	10MHz~ 1.0GHz	6dB max.	1
458DB-1003	3	8MHz~800MHz	3.5dB max.	1
458DB-1008	4	6MHz~600MHz	2.5dB max.	1
458DB-1011	5	5MHz~500MHz	2dB max.	1
458DB-1005	2	400MHz~ 1.3GHz	4dB max.	1
Frequency Mixer				
458PT-1085	1	—	3dB max.	2
458PT-1052	2	9MHz~350MHz	3dB max.	2
458PT-1024	3	3.5MHz~470MHz	3dB max.	2
458PT-1086	4	2.2MHz~400MHz	3dB max.	2
458PT-1087	5	1.5MHz~300MHz	3dB max.	2
Power Divider/Combiner				
458DS-1014		20MHz~600MHz	IN to OUT-1, 2 4.5dB max. OUT-1 to OUT-2 (ISOLATION) 10dB min.	6
Directional Coupler			IN to OUT-1 1.3dB max.	
458PS-1015	4	6MHz~600MHz	IN to OUT-2 11dB ~14dB	7
458PS-1006	5	6MHz~600MHz	IN to OUT-1 0.9dB max. IN to OUT-2 13dB ~16dB	7
458PS-1007	6	6MHz~600MHz	IN to OUT-1 0.8dB max. IN to OUT-2 15dB ~17dB	7

TYPE B5FL

TOKO Part Number	Number of Turns per Winding	Operating Frequency Range (MHz)	Insertion Loss (dB)	Fig.
Double Balanced Mixer				
616DB-1003	2	30 ~ 850	3	1
616DB-1004	3	6.5~1000	3	1
616DB-1007	4	3.5~1600	3	1
616DB-1008	5	2.5~1500	3	1
Frequency Mixer				
616PT-1027	1	—	3	2
616PT-1028	2	8 ~ 550	3	2
616PT-1029	3	3.5~ 500	3	2
616PT-1030	4	2 ~ 370	3	2
616PT-1037	1	—	3	2
616PT-1038	2	500 ~ 850	3	2
616PT-1039	3	240 ~ 500	3	2
616PT-1040	4	85 ~ 380	3	2
Balun Transformer				
616DB-1048	1½	5.5~ 850	3	3
616DB-1049	2½	2.5~2000	3	3
616DB-1050	3½	1.2~1700	3	3
616DB-1051	4½	0.8~1400	3	3
616DB-1078	5½	0.6~1300	3	3
Balun Transformer				
616DB-1053	1½	160 ~2200	3	4
616DB-1017	2½	55 ~1700	3	4
616DB-1054	3½	30 ~1400	3	4

Pin Connections

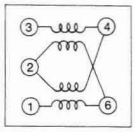


Fig. 1

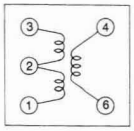


Fig. 2

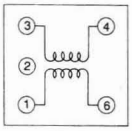


Fig. 3

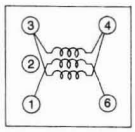


Fig. 4

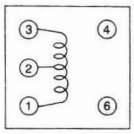
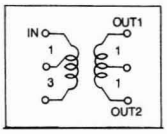
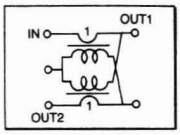


Fig. 5

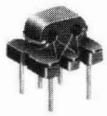


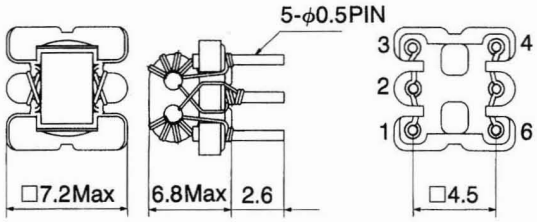
Distributor / Fig. 6



Directional Coupler / Fig. 7

TYPE B7T: Leaded





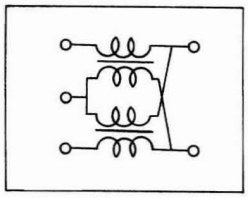
Unit: mm

STANDARD TRANSFORMERS SELECTION GUIDE

TYPE B7T

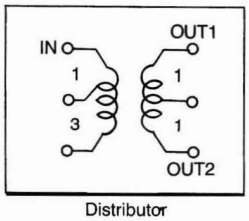
TOKO Part Number	Number of turns per Winding	Operating Frequency Range	Insertion Loss	Fig.
Double Balanced Mixer				
456DB-1013	1	50MHz~400MHz	10dB max.	
456DB-1014	2	10MHz~ 1.0GHz	6dB max.	1
456DB-1005	3	8MHz~800MHz	3.5dB max.	1
456DB-1006	4	6MHz~600MHz	2.5dB max.	1
456DB-1007	5	5MHz~500MHz	2dB max.	1
456DB-1009	2	400MHz~ 1.3GHz	4dB max.	1
Power Divider/Combiner			IN to OUT-1, 2 4.5dB max.	
456DS-1012		20MHz~600MHz	OUT-1 to OUT-2 (ISOLATION) 10dB min.	6
Directional Coupler			IN to OUT-1 1.3dB max. IN to OUT-2 11dB ~14dB	
456PS-1015	4	6MHz~600MHz		7
456PS-1016	5	6MHz~600MHz	IN to OUT-1 0.9dB max. IN to OUT-2 13dB ~16dB	7
456PS-1011	6	6MHz~600MHz	IN to OUT-1 0.8dB max. IN to OUT-2 15dB ~17dB	7

Pin Connections



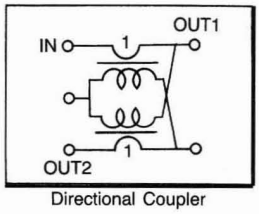
Double Balanced Mixer

Fig. 1



Distributor

Fig. 6

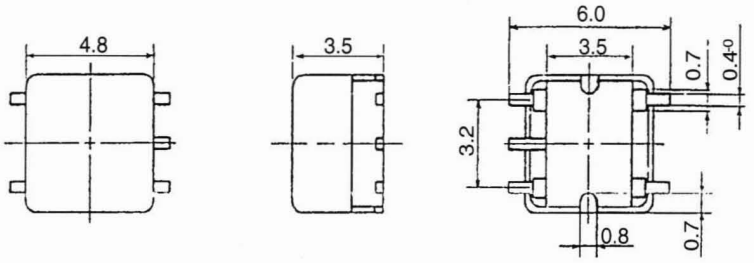


Directional Coupler

Fig. 7

TYPE B4QF

Frequency Range: 1-500MHz



Features

- Phase 90°±1~5°
- Insertion Loss: 2.5 to 3.5dB Typ.
- Amplitude Unbalance: 1dB max.
- Impedance: 50ohm

Unit: mm
Tolerance: ±0.3

Applications

- Antenna networks
- Image rejection mixer systems
- I and Q networks

STANDARD PARTS SELECTION GUIDE

TYPE B4QF

TOKO Part Number	Center Frequency (Fo) MHz	Impedance (Ω)	Phase Max. Deg. at Fo	Insertion Loss Max. dB at Fo	Amplitude Unbalance Max. dB at Fo	Isolation Typ. (dB)	VSWR Typ.
B4QF-1024	1.14	50	90±4.0	4.0	1.0	45	1.03
B4QF-1001	10.7	50	90±2.0	4.0	1.0	39	1.01
B4QF-1004	28.35	50	90±2.0	4.0	1.0	36	1.05
B4QF-1023	36	50	90±2.0	4.0	1.0	32	1.06
B4QF-1028	43.2	50	90±2.0	4.0	1.0	27	1.06
B4QF-1022	71	50	90±2.0	4.0	1.0	30	1.07
B4QF-1009	90	50	90±2.0	4.0	1.0	25	1.13
B4QF-1006	98	50	90±2.0	4.0	1.0	26	1.11
B4QF-1008	110	50	90±2.0	4.0	1.0	28	1.08
B4QF-1016	118	50	90±2.0	4.0	1.0	28	1.10
B4QF-1007	140	50	90±2.0	4.0	1.0	25	1.08
B4QF-1010	150	50	90±2.0	4.0	1.0	25	1.10
B4QF-1020	215	50	90±2.0	4.0	1.0	23	1.15
B4QF-1005	240	50	90±2.0	4.0	1.5	20	1.17
B4QF-1019	403	50	90±3.0	4.2	1.0	16	1.26
B4QF-1018	430	50	90±3.0	4.2	1.0	16	1.20
B4QF-1021	455	50	90±3.0	4.2	1.0	15	1.26

TOKO

EL Driving Inverter Transformers

CCFL Driving Inverter Transformers

CONTENTS

EL/CCFL Driving Inverter Transformers

EL Driving Inverter Transformers

BLE20 186

CCFL Driving Inverter Transformers

BLC Series 187

BLC10, BLC13, BLC13H 188

BLC16, BLC18 189

BLC216 189

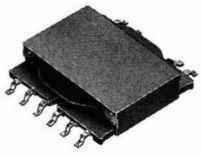
Caution

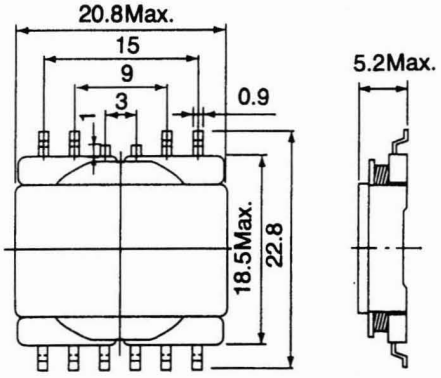
BLC Series

The inverter transformer generates high voltage and should not be touched during operation.

TYPE BLE20

(1) EL Driving Inverter Transformers
Inductance Range: 2.5H max.
Applicable EL size: 60 cm2
(2) DC-DC Converter Transformers
Maximum Conversion Power: 10W max. (flyback system)





Unit: mm

Features

- Profile max. 5.2mm high
- Suitable for surface mounting (reflow soldering)

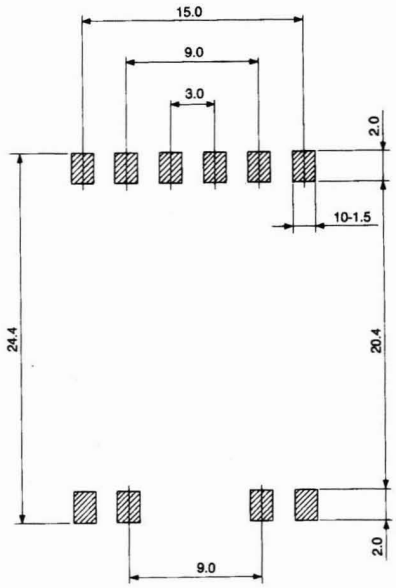
Applications

- EL Driving inverter transformers
- Multi-Output DC-DC converter transformers

Specifications

Input Voltage	5 ~ 15 V
Output Voltage	200Vrms Max.
Max. Inductance	2.5 H Max.
Applicable EL size	60 cm^2 Max.

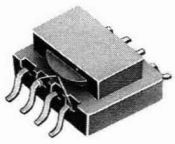
RECOMMENDED PATTERNS

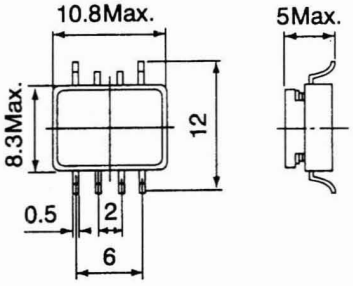


TYPE BLC Series

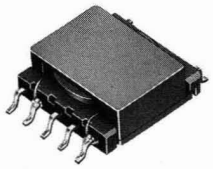
Type		BLC10	BLC13	BLC13H	BLC16	BLC18	BLC216
Input Voltage	(V)	3 ~ 9	5 ~ 12	5 ~ 12	5 ~ 12	5 ~ 14	5 ~ 12
Output Open-Circuit Voltage	(Vms)	2500V (0-P) max.	800 max.	1200 max.	1100 max.	1800 max.	1500 max.
Frequency	(KHz)	fH	20 ~ 90	20 ~ 90	20 ~ 90	30 ~ 90	30 ~ 90
Output Power	(W)	0.7 max.	2.0 max.	3 max.	3 max.	6 max.	5 max.
Dielectric Strength	(kVms)	2.5 min.	2.5 min.	2.5 min.	2.5 min.	2.5 min.	2.5 min.

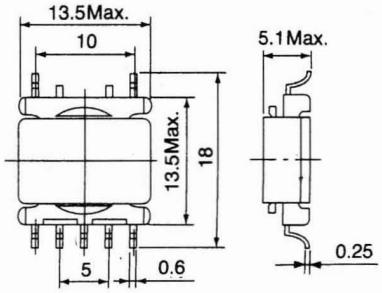
BLC10



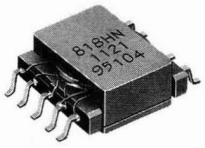


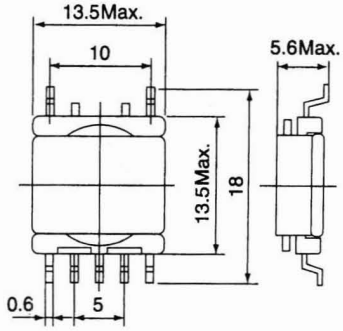
BLC13



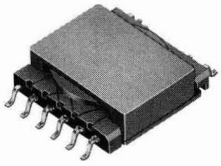


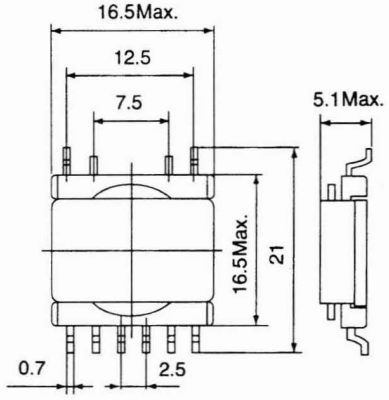
BLC13H



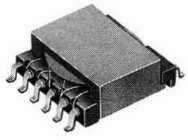


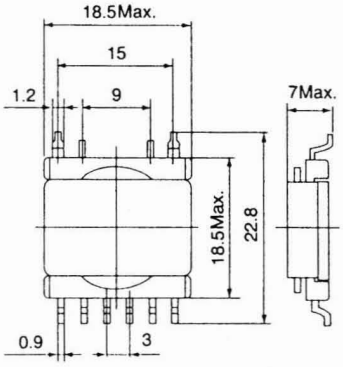
BLC16



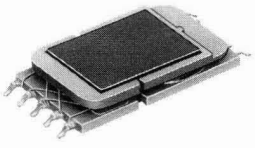


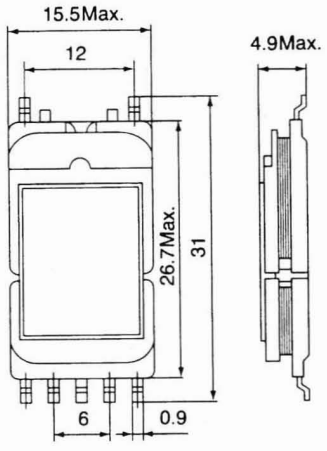
BLC18





BLC216





Unit: mm

continued from previous page

TYPE BLC

Features

- High-voltage secondary coil with optimal magnetic circuit structure and Toko's original multi-layer solenoid winding
- High efficiency
- Suitable for surface mounting with reflow soldering or with automatic means
- Superior dielectric strength due to separated construction of primary and secondary coils
- To prevent wire breakage in the high-voltage secondary coil, U-shaped terminals are used to separate wiring terminals and PCB soldering terminals

Applications

Type	*BLC10*	*BLC13*	*BLC13H*	*BLC16*	*BLC18*	*BLC216*
Comcorder	X	X				
Monitor TV		X	X	X	X	X
LCD TV		X	X	X	X	X
Large-size LCD TV			X	X	X	X
Personal Computer			X	X	X	X
Word Processor			X	X	X	X
Monitor TV for vehicles					X	X
Scanner			X	X	X	X
Display for ADV					X	X
Fax					X	X

STANDARD TRANSFORMERS SELECTION GUIDE

TYPE BLC10

Toko Part Number	Input Voltage Vin (V)	Input Current I in (mA)	Output Open Circuit Vo (Vo-p)	Input Puls Width ton (μ sec)
679YN-1032	6	52	2500	6.7
679YN-1033	6	56	2500	10.1
679YN-1034	5	75	2500	10.8

TYPE BLC13

Toko Part Number	Input Voltage (V)	Output Voltage (V) rms	C_C (pF)	C_L (pF)	R_L (kΩ)	R_B (kΩ)	Input Current (mA)	Electrical Output Current (mA)	Characteristics Efficiency η (%)	Oscillating Freq. (KHz)	*Min. Freq. (KHz)
678XN-1075	6	600	33000	27	68	1.0	450	5.7	82	75	54
678XN-1076	9	600	33000	27	68	1.0	256	5.3	83	71	50
678XN-1077	12	600	22000	33	68	1.0	227	5.6	78	67	51
678XN-1078	6	700	47000	22	68	1.0	430	5.5	80	75	61
678XN-1079	9	700	47000	22	68	1.0	266	5.3	80	72	59
678XN-1080	12	700	33000	27	68	1.0	245	5.8	78	65	57
678XN-1081	6	800	68000	18	68	1.0	490	5.8	78	77	71
678XN-1082	9	800	47000	18	68	1.0	292	5.5	78	88	64
678XN-1083	12	800	33000	18	68	1.0	234	5.6	76	74	66

TYPE BLC13H

Toko Part Number	Input Voltage (V)	Output Voltage (V) rms	C_C (pF)	C_L (pF)	R_L (kΩ)	R_B (kΩ)	Input Current (mA)	Electrical Output Current (mA)	Characteristics Efficiency η (%)	Oscillating Freq. (KHz)	*Min. Freq. (KHz)
D818HN-1105	5.0	1190	68000	12	62	0.75	730	6.95	81.9	79.4	59.1
D818HN-1108	5.5	910	68000	18	66.5	0.51	575	6.20	80.7	64.9	55.8
D818HN-1120	6.0	1000	39000	18	122	0.56	574	4.90	85.1	58.8	53.2
D818HN-1112	6.0	1200	82000	10	122	0.56	640	5.05	81.0	77.5	70.9
D818HN-1110	7.0	980	68000	15	75	0.68	352	5.10	79.2	63.3	55.2
D818HN-1123	8.0	860	56000	22	75	2.0	325	5.40	84.1	55.6	47.3
D818HN-1107	9.0	1140	33000	12	82	1.5	339	5.50	81.3	71.9	63.9

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STANDARD TRANSFORMERS SELECTION GUIDE

TYPE BLC16

Toko Part Number	Input Voltage (V)	Output Voltage (V) rms	C_C (pF)	C_L (pF)	R_L (kΩ)	R_B (kΩ)	Input Current (mA)	Electrical Output Current (mA)	Characteristics Efficiency η (%)	Oscillating Freq. (KHz)	Output Voltage (kV)
677XN-1033	6	700	47000	33	68	1.0	368	5.2	83	42	1.03
677XN-1034	9	700	47000	33	68	1.0	247	5.5	83	42	0.99
677XN-1035	12	700	33000	39	68	1.0	210	5.5	82	39	0.97
677XN-1036	6	900	47000	22	75	1.0	440	5.4	83	49	1.31
677XN-1037	9	900	47000	22	75	1.0	294	5.4	83	51	1.28
677XN-1038	12	900	33000	22	75	1.0	241	5.6	81	50	1.31
677XN-1039	6	1100	68000	15	82	0.75	508	5.5	81	65	1.54
677XN-1040	9	1100	47000	15	82	1.0	323	5.4	82	60	1.54
677XN-1041	12	1100	22000	15	82	1.0	259	5.5	80	61	1.55

TYPE BLC18

Toko Part Number	Input Voltage (V)	Output Voltage (V) rms	C_C (pF)	C_L (pF)	R_L (kΩ)	R_B (kΩ)	Input Current (mA)	Electrical Output Current (mA)	Characteristics Efficiency η (%)	Oscillating Freq. (KHz)	*Min. Freq. (KHz)
696XG-1052	6	1200	100000	15	100	1.5	551	5.35	86.5	54.6	41.5
696XG-1085	9	1200	8200	18	100	1.5	408	5.58	84.8	49.2	43.5
696XG-1053	12	1200	47000	15	100	1.5	277	5.26	83.2	51.4	44.7
696XG-1057	6	1500	82000	12	100	1.5	522	5.12	83.4	50.1	41.5
696XG-1058	9	1500	56000	12	100	1.5	358	5.18	83.3	50.0	43.5
696XG-1059	12	1500	33000	12	100	1.5	292	5.38	82.6	50.1	44.7
696XG-1093	6	1600	100000	12	100	1.5	635	5.66	84.1	54.0	42.2
696XH-1094	9	1600	68000	12	100	1.5	428	5.70	84.3	53.6	43.6
696XG-1095	12	1600	47000	12	100	1.5	330	5.72	82.6	51.8	44.7

TYPE BLC216: without the Ballast capacitor

Toko Part Number	Input Voltage (V)	Output Voltage (V) rms	C_C (pF)	C_L (pF)	R_L (kΩ)	R_B (kΩ)	Input Current (mA)	Electrical Output Current (mA)	Characteristics Efficiency η (%)	Oscillating Freq. (KHz)	*Min. Freq. (KHz)
825TG-1017	6	800	150000	-	75	1.0	455	5.51	83.4	60.5	1.13
825TG-1018	9	800	68000	-	75	1.5	271	5.16	81.9	55.1	1.15
825TG-1019	12	800	47000	-	75	2.2	215	5.30	81.6	54.9	1.19
825TG-1020	6	1000	150000	-	75	1.0	375	4.93	81.0	61.0	1.38
825TG-1021	9	1000	68000	-	75	1.5	271	5.13	80.9	60.0	1.35
825TG-1022	12	1000	39000	-	75	2.2	201	5.12	81.5	61.6	1.39
825TG-1023	6	1200	120000	-	75	1.0	433	5.39	83.9	70.4	1.65
825TG-1024	9	1200	68000	-	75	1.5	276	5.19	81.3	60.6	1.64
825TG-1025	12	1200	47000	-	75	2.2	209	5.20	80.9	60.7	1.68

TYPE BLC216: with the Ballast capacitor

Toko Part Number	Input Voltage (V)	Output Voltage (V) rms	C_C (pF)	C_L (pF)	R_L (kΩ)	R_B (kΩ)	Input Current (mA)	Electrical Output Current (mA)	Characteristics Efficiency η (%)	Oscillating Freq. (KHz)	*Min. Freq. (KHz)
825TG-1026	6	800	68000	18	75	1.0	444	5.52	85.8	62.4	1.12
825TG-1027	9	800	47000	18	75	1.5	300	5.46	82.6	57.1	1.11
825TG-1028	12	800	39000	18	75	2.2	212	5.27	81.6	54.9	1.13
825TG-1029	6	1000	68000	15	75	1.0	392.2	5.09	82.5	51.0	1.43
825TG-1030	9	1000	47000	15	75	1.5	305	5.48	82.7	54.9	1.40
825TG-1031	12	1000	39000	15	75	2.2	306	5.48	81.97	54.9	1.40
825TG-1032	6	1200	82000	12	75	1.0	396.1	5.05	80.6	63.8	1.70
825TG-1033	9	1200	47000	12	75	1.5	271	5.08	79.4	52.3	1.66
825TG-1034	12	1200	39000	12	75	2.2	219	5.22	77.7	52.3	1.70

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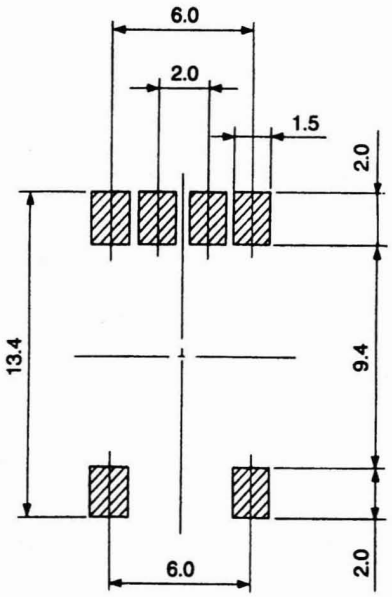
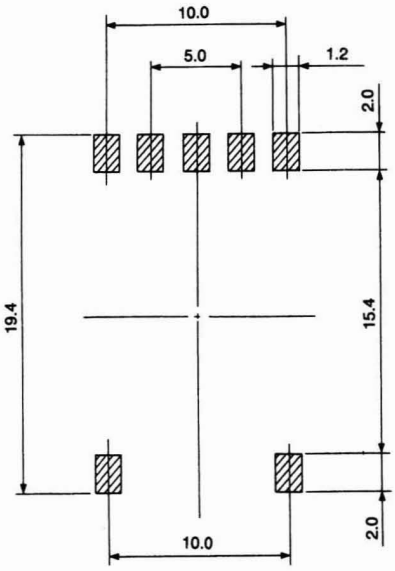
RECOMMENDED PATTERNS

Unit: mm

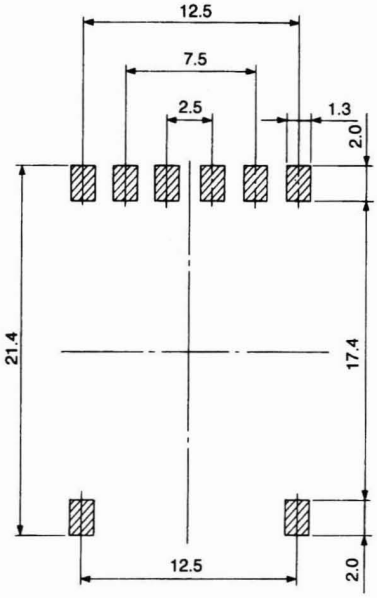
TYPE BLC10



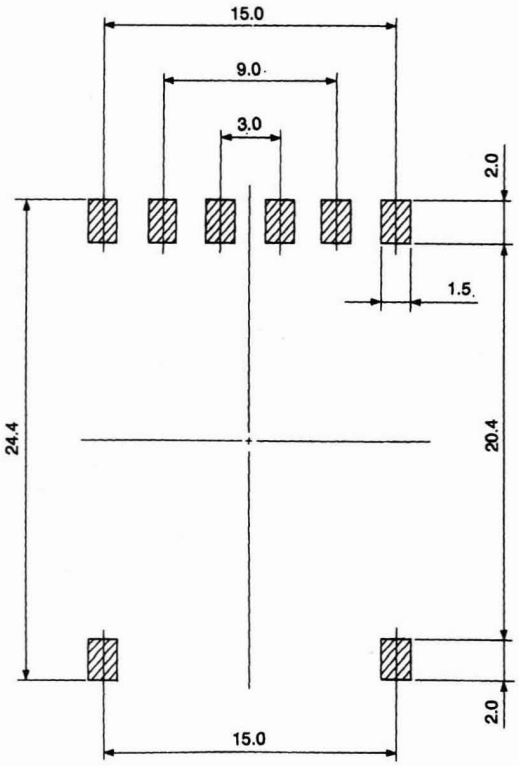
TYPE BLC13/BLC13H



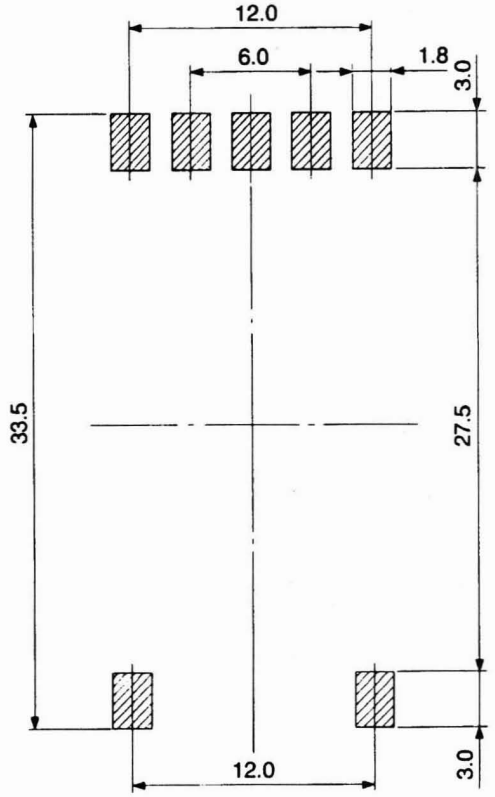
TYPE BLC16



TYPE BLC18



TYPE BLC216



TOKO

Ceramic Filters and Oscillators

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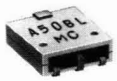
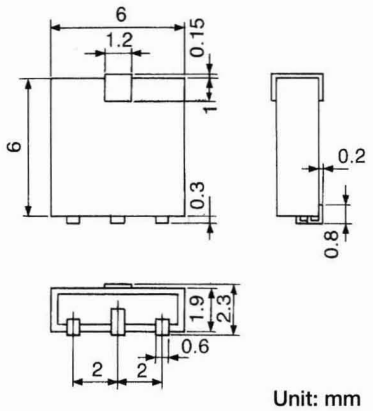
TYPE ECFM2/ECMF3 for Surface Mounting





Unit: mm

Description

- 2/3 element AM ceramic filters for surface mounting. Unique structure gives high reliability. Suitable for automated mounting, reflow soldering, and flux rinsing.
- Ultra-compact: 6x6x2.3mm.

Features

- Ultra-compact
- Suitable for reflow soldering and flux rinsing
- Frequency range variations available
- Superior vibration, shock resistance characteristics

Applications

- Compact, slim-line AM radio cassettes and headphones
- CB transceivers

STANDARD FILTERS SELECTION GUIDE

TYPE ECFM2/ECFM3

TOKO Part Number	Center Frequency (Fo)* (KHz)	Bandwidth at 6dB (KHz)	Selectivity at Fo±9kHz (dB)	Ripple in Pass Band (dB)	Insertion Loss (dB)	Input/Output Impedance (kΩ)
ECFM2						
AECFM2-450AL	450±1.0	4.0 min.	18.0 min.	1.0 max.	6.0 max.	3.0/3.0
AECFM2-450BL	450±1.0	5.5 min.	17.0 min.	1.0 max.	6.0 max.	3.0/3.0
AECFM2-450CL	450±1.0	8.0 min.	12.0 min.	2.0 max.	6.0 max.	3.0/3.0
AECFM2-450DL	450±1.0	10.0 min.	9.0 min.	2.0 max.	6.0 max.	3.0/3.0
ECFM3						
AECFM3-450AL	450±1.0	4.0 min.	28.0 min.	2.0 max.	6.0 max.	3.0/3.0
AECFM3-450BL	450±1.0	5.5 min.	24.0 min.	2.0 max.	6.0 max.	3.0/3.0
AECFM3-450CL	450±1.0	8.0 min.	20.0 min.	2.0 max.	6.0 max.	3.0/3.0

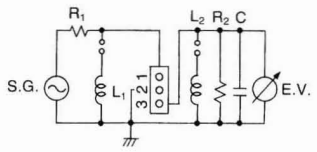
* Center frequencies 450KHz, 455KHz, 459KHz, 460KHz available as standard. Center frequency tolerance available to ±0.5KHz.

* (L) in part number designates inductor in test circuit.

Test Conditions

1. C includes test circuit capacitance (50pF without L_2 62pF with L_2)
2. L_1 1.35mH, L_2 1.0mH
3. During testing, when matching coils are used at input/output sides, connect L_1 and L_2 (dummy)
4. R_1, R_2: Input-output impedance
   Cs: Stray capacitance
   (less than 15pF, including EV)

Test Circuit



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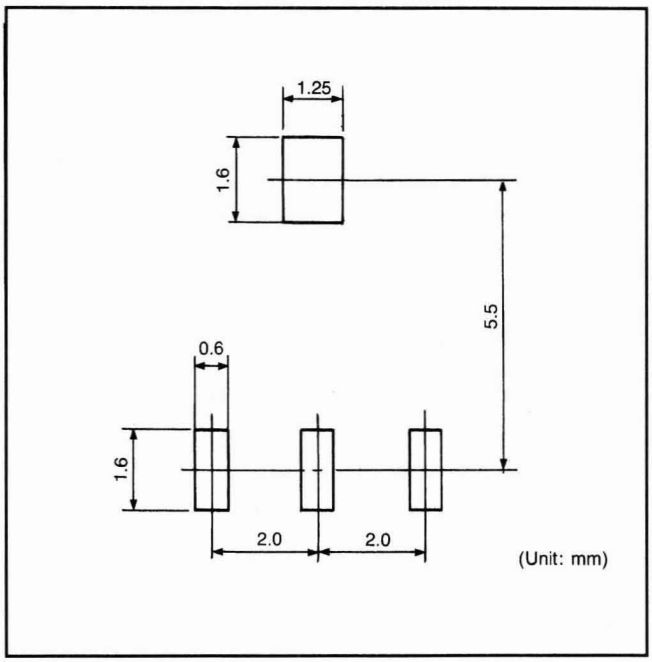
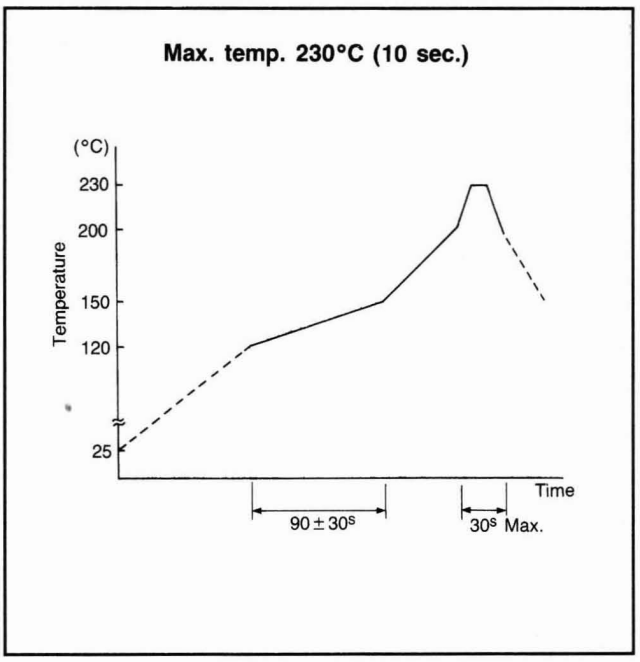
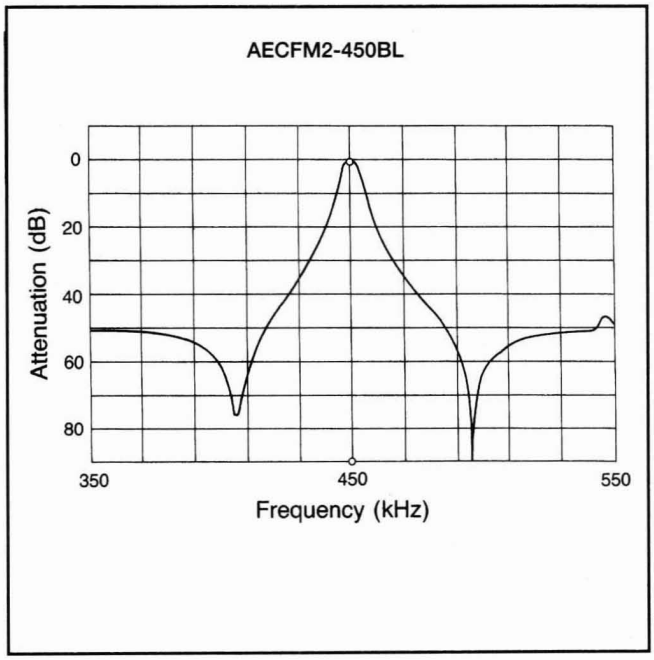
Standard pattern dimensions



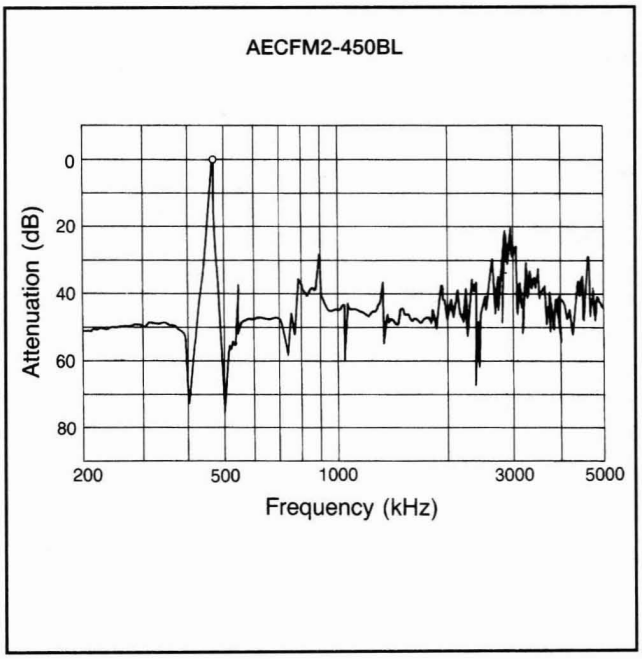
Standard reflow soldering conditions



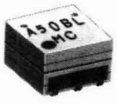
Frequency characteristics

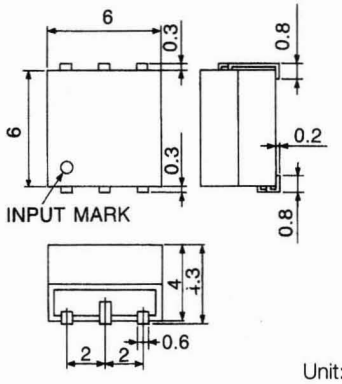


Spurious response characteristics



TYPE ECFM4/ECFM5 for Surface Mounting





Unit: mm

Description

- Ultra-compact 4/5 element AM ceramic filters for surface mounting. Unique structure for high reliability. Suitable for automated mounting, reflow soldering, and flux rinsing.
- Coupling capacitance is not required, making these filters ideal for use with precision mounting devices.
- Ultra-compact: 6x6x4.3mm

Features

- Ultra-compact
- Suitable for reflow soldering, flux rinsing
- Frequency range variations available
- Superior vibration, shock resistance characteristics

Applications

- Compact tuner packs, specified low power transceivers, high sensitivity receivers
- CB transceivers

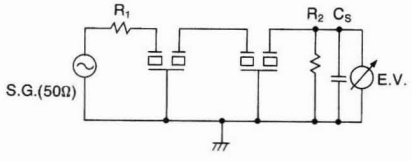
STANDARD FILTERS SELECTION GUIDE

TYPE ECFM4/ECFM5

TOKO Part Number	Center Frequency (Fo)* (KHz)	Bandwidth at 6dB (KHz)	Selectivity at Fo±9KHz (dB)	Ripple in Pass Band (dB)	Insertion Loss (dB)	Input/Output Impedance (kΩ)
ECFM4						
AECFM4-450A	450±1.0	4.0 min.	45.0 min.	2.0 max.	6.0 max.	3.0/3.0
AECFM4-450B	450±1.0	5.5 min.	35.0 min.	2.0 max.	6.0 max.	3.0/3.0
AECFM4-450C	450±1.0	8.0 min.	25.0 min.	2.0 max.	6.0 max.	3.0/3.0
ECFM5						
AECFM5-450A	450±1.0	4.0 min.	60.0 min.	2.0 max.	6.0 max.	3.0/3.0
AECFM5-450B	450±1.0	5.5 min.	55.0 min.	2.0 max.	6.0 max.	3.0/3.0
AECFM5-450C	450±1.0	8.0 min.	50.0 min.	2.0 max.	6.0 max.	3.0/3.0

* Center frequencies 450KHz, 455KHz, 459kHz, 460KHz, 468KHz available. Center frequency tolerance available to ±0.5KHz.

Test Circuit



Test Conditions

R_1, R_2: Input-output impedance
Cs: Stray capacitance
(less than 15pF, including EV)

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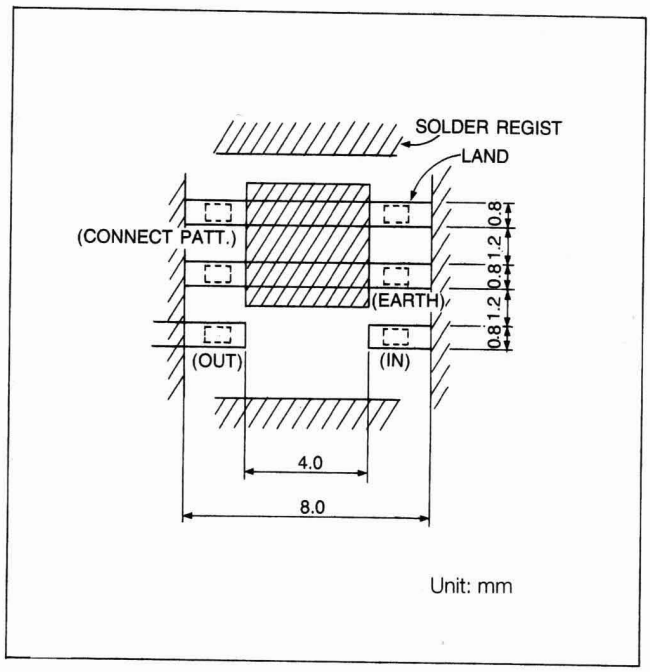
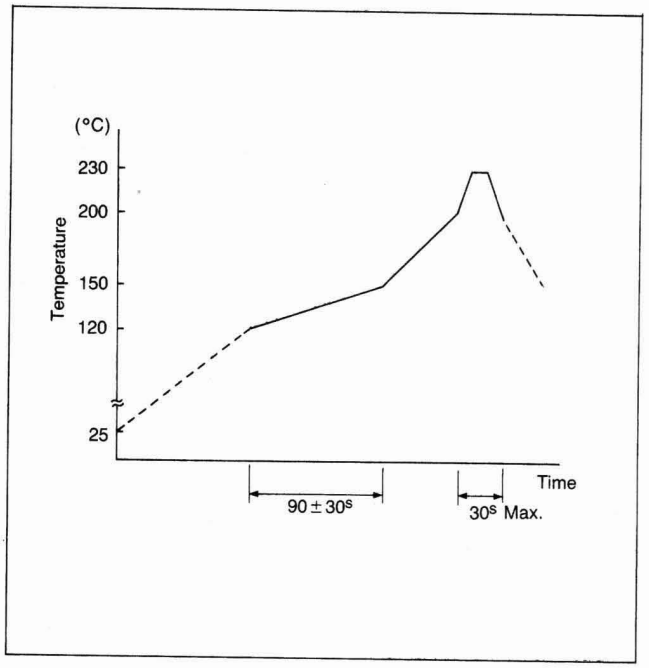
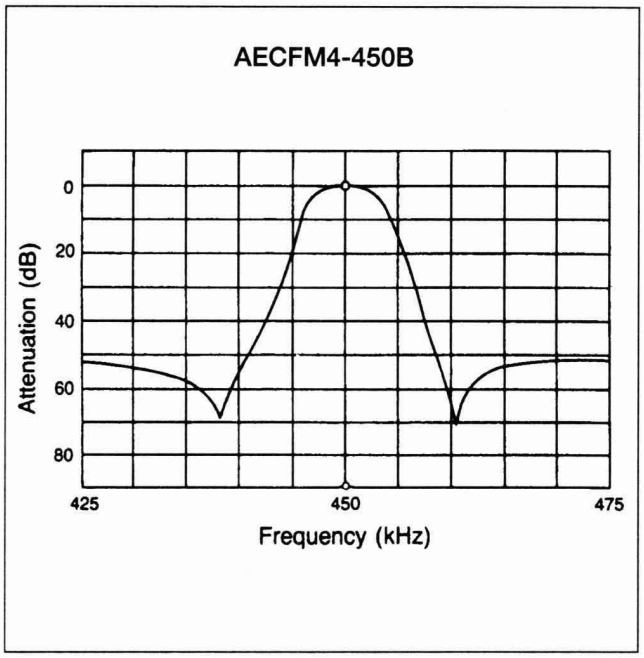
Standard pattern dimensions



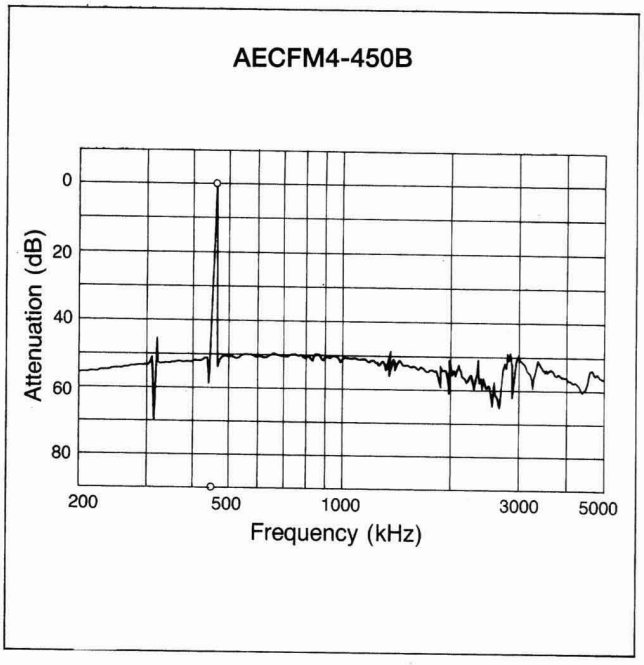
Standard reflow soldering conditions



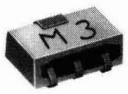
Frequency characteristics



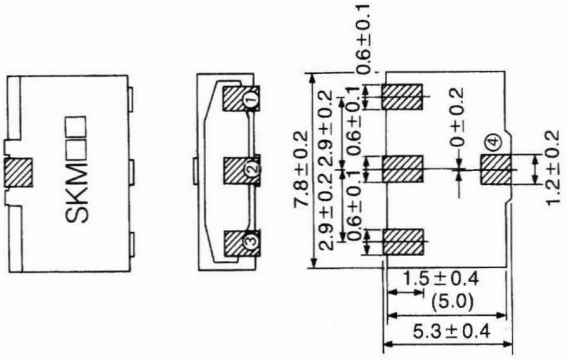
Spurious response characteristics



TYPE ECFSK for Surface Mounting



ESK107MA/1



Unit: mm

Description

- Highly reliable, ultra-compact FM ceramic filter for surface mounting. Suitable for automated mounting, reflow soldering, and flux rinsing.

Features

- Ideal for compact, low profile sets
- Suitable for reflow soldering and flux rinsing
- Range of frequency bands available
- High reliability
- Can be supplied as kit with AM/FM filter

Applications

- Ideal for digital telecommunications equipment, compact slimline radios, car radios, headphone stereo equipment, etc.
- CB transceivers

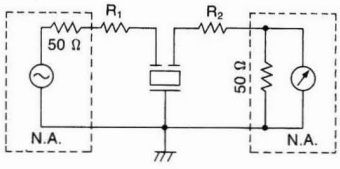
STANDARD FILTERS SELECTION GUIDE

TYPE ECFSK

TOKO Part Number	Center Frequency (Fo)* (MHz)	Bandwidth at 3dB (KHz)	Bandwidth at 20dB (KHz)	Insertion Loss (dB)	Sperious Response (dB)	Input/Output Impedance (kΩ)
ESK107MA-AE-10	10.70±0.03	360±50	720 max.	5.0 max.	30 min.	330/330
ESK107M1-AE-10	10.70±0.03	280±50	650 max.	6.0 max.	30 min.	330/330

* Applicable center frequencies: 10.3MHz — 11.5MHz. Center frequency tolerance: ±30KHz; ±25KHz and ±20KHz also available.

Test Circuit



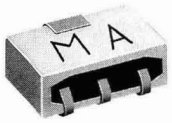
Test Conditions

R_1: 280Ω
R_2: 280Ω
N.A.: HP4194A or equivalent
(Input capacitance less than 15pF)

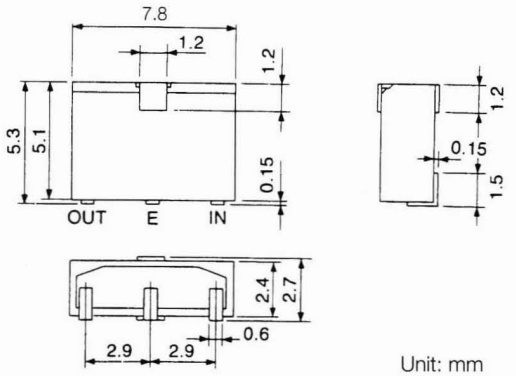
Fo Rank Table

Rank	Center Frequency	Rank Code
A	10.70±0.03MHz	A
B	10.67±0.03MHz	B
C	10.73±0.03MHz	C
D	10.64±0.03MHz	D
E	10.76±0.03MHz	E

TYPE ECFSK for Surface Mounting



ECFSK107MA/1-C
ECFSK108MA/1-C



Unit: mm

Description

- Highly reliable, ultra-compact FM ceramic filter for surface mounting. Suitable for automated mounting, reflow soldering, and flux rinsing.

Features

- Ideal for compact, low profile sets
- Range of frequency bands available
- High reliability

Applications

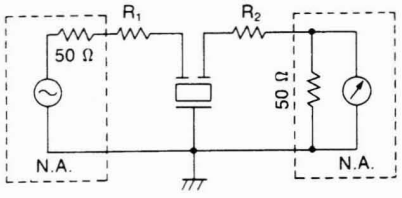
- Station type telecommunications equipment (PHS/GSM), portable equipment

STANDARD FILTERS SELECTION GUIDE

TYPE ECFSK-C

TOKO Part Number	Center Frequency (Fo) (MHz)	Bandwidth at 3dB (KHz)	Selectivity at Fo±500KHz (dB)	Selectivity at Fo±600KHz (dB)	Ripple in Fo±110KHz (dB)	Insertion in Loss (dB)	Input/Output Impedance (kΩ)	Note
ESK1075MA-AO-013C	10.75	Fo±120 min.	20 min.		1.0 max.	4.0 max.	330/330	TX
ESK1075M1-AO-010C	10.75	Fo±120 min.	35 min.		1.0 max.	6.0 max.	330/330	RX
ESK108MA-AO-012C	10.80	Fo±130 min.		38 min.	1.0 max	4.0 max.	330/330	TX
ESK108M1-AO-022C	10.80	Fo±110 min.		40 min.	1.0 max.	6.0 max.	330/330	RX

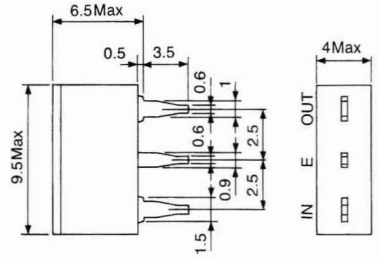
Test Circuit



Test conditions

R1: 280Ω
R2 280Ω
N.A.: HP4194A or equivalent
(Input capacitance less than 15 pF)

TYPE CFA



Unit: mm

Description

- Unique structure single element AM IF filter
- Center frequency range: 450 — 470KHz
- Bandwidth at 6dB: 13±3KHz

Features

- Compact, low profile
- High selectivity, suited to a wide range of applications
- Low temperature coefficient
- Low spurious response

Applications

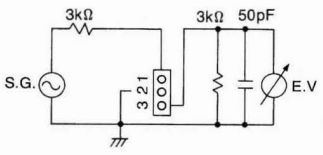
- AM radio-cassettes
- CB transceivers

STANDARD FILTERS SELECTION GUIDE

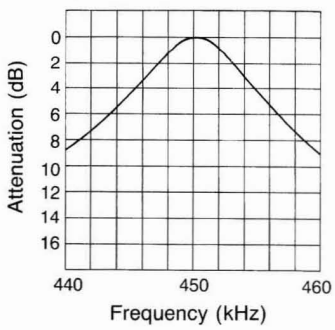
TYPE CFA

TOKO Part Number	Center Frequency (KHz)	Bandwidth at 6dB (KHz)	Selectivity at Fo±9kHz (dB)	Ripple in Pass Band (dB)	Insertion Loss (dB)	Input/Output Impedance (kΩ)
ACFA-450	450±1.1	13±3.0	6.0 min.	0	5.0 max.	3.0/3.0
BCFA-450	450±2.1	13±3.0	6.0 min.	0	5.0 max.	3.0/3.0
ACFA-455	455±1.1	13±3.0	6.0 min.	0	5.0 max.	3.0/3.0
BCFA-455	455±2.1	13±3.0	6.0 min.	0	5.0 max.	3.0/3.0
ACFA-459	459±1.1	13±3.0	6.0 min.	0	5.0 max.	3.0/3.0
BCFA-459	459±2.1	13±3.0	6.0 min.	0	5.0 max.	3.0/3.0
ACFA-468	468±1.1	13±3.0	6.0 min.	0	5.0 max.	3.0/3.0
BCFA-468	468±2.1	13±3.0	6.0 min.	0	5.0 max.	3.0/3.0

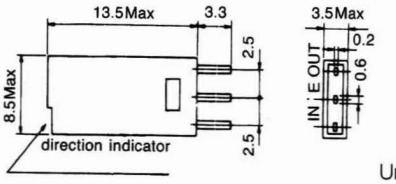
Test Circuit



Frequency Response ACFA-450



TYPE CFM8



Unit: mm

Description

- 2 element AM IF filter with unique structure for high reliability
- Center frequency range: 220 — 380KHz
- Bandwidth at 6dB: 4 — 8KHz

Features

- High reliability
- High selectivity
- Low temperature coefficient
- Low spurious response

Applications

- Data telecommunications equipment, etc.
- Wired radio, CB transceivers

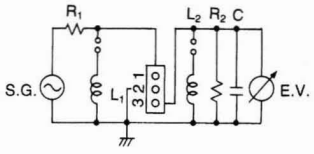
STANDARD FILTERS SELECTION GUIDE

TYPE CFM8

TOKO Part Number	Center Frequency (Fo)* (KHz)	Bandwidth at 6dB (KHz)	Selectivity at Fo±9KHz (dB)	Ripple in Pass Band (dB)	Insertion Loss (dB)	Input/Output Impedance (kΩ)
CFM8-260Z	260±2.0	4.0±1.0	24.0 min.	1.0 max.	6.0 max.	2.0/2.0
CFM8-260A	260±2.0	4.0 min.	18.0 min.	1.0 max.	6.0 max.	2.0/2.0
CFM8-260B	260±2.0	6.0 min.	17.0 min.	1.0 max.	6.0 max.	3.0/3.0
CFM8-260C	260±2.0	8.0 min.	12.0 min.	1.0 max.	6.0 max.	5.0/5.0

* Center frequencies 260KHz, 262.5KHz available. Center frequency tolerance available to ±0.5KHz.

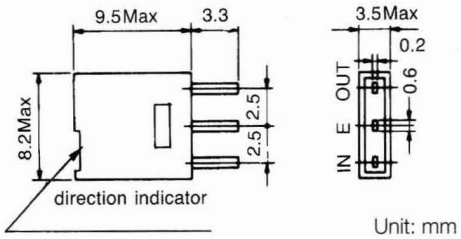
Test Circuit



Test Conditions

1. C includes test circuit capacitance. (50pF without L_2, 62pF with L_2)
2. L_1 2.7mH, L_2 1.0mH
3. During testing, when matching coils are used at input/output sides, connect L_1 and L_2 (dummy)
4. R_1, R_2: Input-output impedance
   Cs: Stray capacitance
   (less than 50pF, including EV)

TYPE CFM2/CFM3



Unit: mm

Description

- Compact 2/3 element AM IF filter with unique structure for high reliability.
- Center frequency range: 450 to 470KHz
- Bandwidth at 6dB: 4 to 12KHz. (4~8KHz: CFM3)

Features

- Compact, low profile
- High selectivity, suited to a wide range of applications
- Low temperature coefficient
- Low spurious response

Applications

- AM radio cassettes, stereo sets, telecommunications
- CB transceivers

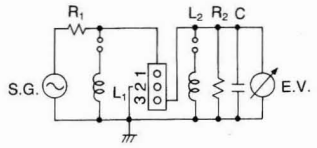
STANDARD FILTERS SELECTION GUIDE

TYPE CFM2/CFM3

TOKO Part Number	Center Frequency (Fo)* (KHz)	Bandwidth at 6dB (KHz)	Selectivity at Fo±9kHz (dB)	Ripple in Pass Band (dB)	Insertion Loss (dB)	Input/Output Impedance (kΩ)
CFM2						
AHCFM2-450ZL	450±1.0	4.0±1.0	24.0 min.	1.0 max.	7.0 max.	1.0/1.5
AHCFM2-450AL	450±1.0	4.0 min.	18.0 min.	1.0 max.	6.0 max.	1.0/1.5
AHCFM2-450BL	450±1.0	6.0 min.	16.0 min.	1.0 max.	6.0 max.	1.5/2.0
AHCFM2-450CL	450±1.0	8.0 min.	12.0 min.	2.0 max.	6.0 max.	2.0/2.0
AHCFM2-450DL	450±1.0	10.0 min.	9.0 min.	2.0 max.	6.0 max.	2.0/2.0
AHCFM2-450EL	450±1.0	12.0 min.	6.0 min.	2.0 max.	6.0 max.	2.5/2.5
CFM3						
ACFM3-450AL	450±1.0	4.0 min.	28.0 min.	1.0 max.	6.0 max.	3.0/3.0
ACFM3-450BL	450±1.0	6.0 min.	24.0 min.	1.0 max.	6.0 max.	3.0/3.0
ACFM3-450CL	450±1.0	8.0 min.	20.0 min.	2.0 max.	6.0 max.	3.0/3.0

* Center frequencies 450KHz, 455KHz, 459KHz, 460KHz, 468KHz available. Center frequency tolerance available to ±0.5KHz.

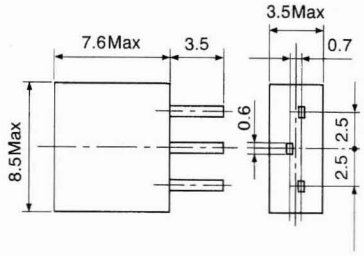
Test Circuit



Test Conditions

1. C includes test circuit capacitance. (50pF without L_2, 62pF with L_2)
2. L_1 2.7mH, L_2 1.0mH
3. During testing, when matching coils are used at input/output sides, connect L_1 and L_2 (dummy)
4. R_1, R_2: Input-output impedance
   Cs: Stray capacitance
   (less than 50pF, including EV)

TYPE CFMR



Unit: mm

Description

- CFM2 type low profile, compact, 2 element AM IF filter with high reliability.
- Center frequency range: 450 — 470KHz
- Bandwidth at 6dB: 4 — 10KHz

Features

- Compact, low profile of only 7.5mm
- High selectivity suited to a wide range of applications
- Low temperature coefficient
- Low spurious response

Applications

- AM radio-cassettes, stereo sets, telecommunications equipment
- CB transceivers

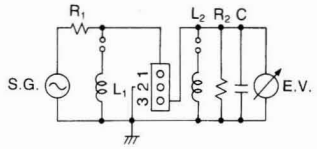
STANDARD FILTERS SELECTION GUIDE

TYPE CFMR

TOKO Part Number	Center Frequency (Fo)* (KHz)	Bandwidth at 6dB (KHz)	Selectivity at Fo±9KHz (dB)	Ripple in Pass Band (dB)	Insertion Loss (dB)	Input/Output Impedance (kΩ)
ACFMR-455Z	455±1.0	4.0±1.0	24.0 min.	1.0 max.	7.0 max.	1.0/1.5
ACFMR-455A	455±1.0	4.0 min.	18.0 min.	1.0 max.	6.0 max.	1.0/1.5
ACFMR-455B	455±1.0	6.0 min.	16.0 min.	1.0 max.	6.0 max.	1.5/2.0
ACFMR-455C	455±1.0	8.0 min.	12.0 min.	2.0 max.	6.0 max.	2.0/2.0
ACFMR-455D	455±1.0	10.0 min.	9.0 min.	2.0 max.	6.0 max.	2.0/2.0

* Center frequencies 450KHz, 455KHz, 459KHz, 460KHz, 468KHz available. Center frequency tolerance available to ±0.5KHz.

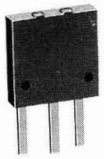
Test Circuit



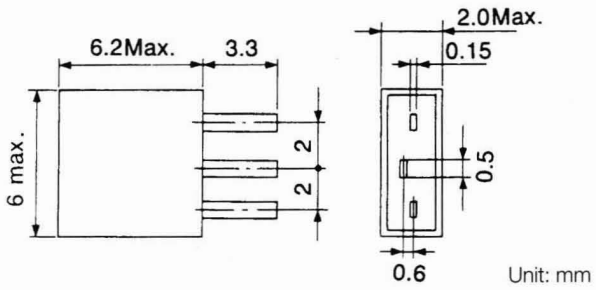
Test Conditions

1. C includes test circuit capacitance.
2. L_1 2.7mH, L_2 1.0mH
3. During testing, when matching coils are used at input/output sides, connect L_1 and L_2 (dummy)
4. R_1, R_2: Input-output impedance
   Cs: Stray capacitance
   (less than 50pF, including EV)

TYPE CFMM2,CFMM3 (CERASIZER)



CFMM2
CFMM3



Unit: mm

Description

- Small type of new CERASIZERS of unique structure for 2/3 element AM IF filters
- Center frequency range: 450 to 470KHz
- Bandwidth at 6dB: 4 to 8KHz

Features

- Compact, low profile
- High selectivity characteristic
- Low temperature coefficient

Applications

- AM radio cassettes, AM stereo sets
- Tuner packs, communications equipment
- CB transceivers

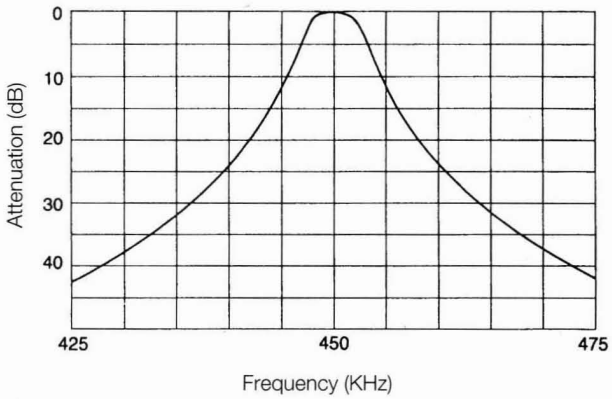
STANDARD FILTERS SELECTION GUIDE

TYPE CFMM2/CFMM3

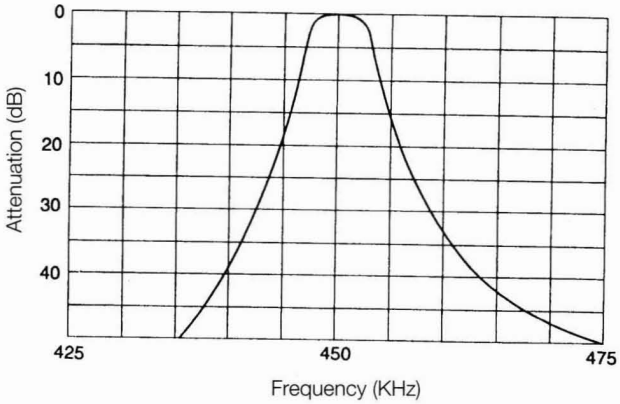
TOKO Part Number	Center Frequency (Fo) (KHz)	Bandwidth at 6 dB (KHz)	Selectivity at Fo±9KHz (dB)	Ripple in Passband (dB)	Insertion Loss (dB)	Input/Output Impedance (kΩ)
CFMM2						
ACFMM2-450A	450±1.0	4.0 min.	18.0 min.	1.0 max.	6.0 max.	3.0/3.0
ACFMM2-450B	450±1.0	5.5 min.	16.0 min.	1.0 max.	6.0 max.	3.0/3.0
ACFMM2-450C	450±1.0	8.0 min.	12.0 min.	2.0 max.	6.0 max.	3.0/3.0
CFMM3						
ACFMM3-450A	450±1.0	4.0 min.	28.0 min.	2.0 max	6.0 max.	3.0/3.0
ACFMM3-450B	450±1.0	5.5 min.	24.0 min.	2.0 max	6.0 max.	3.0/3.0
ACFMM3-450C	450±1.0	8.0 min.	20.0 min.	2.0 max	6.0 max.	3.0/3.0

Frequency Response

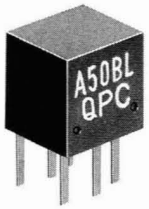
ACFMM2-450B



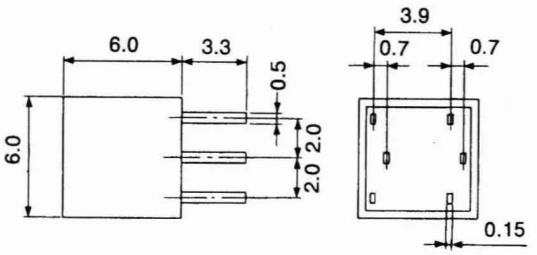
ACFMM3-450B



TYPE CFMM4 (CERASIZER)



CFMM4



Unit: mm

Description

- Small type of new CERASIZERS of unique structure for 4 element AM IF filters
- Center frequency range: 450 to 470KHz
- Bandwidth at 6dB: 4 to 8KHz

Features

- Compact, low profile
- High selectivity characteristic
- Low temperature coefficient

Applications

- AM radio cassettes, AM stereo sets
- Tuner packs, communications equipment
- CB transceivers

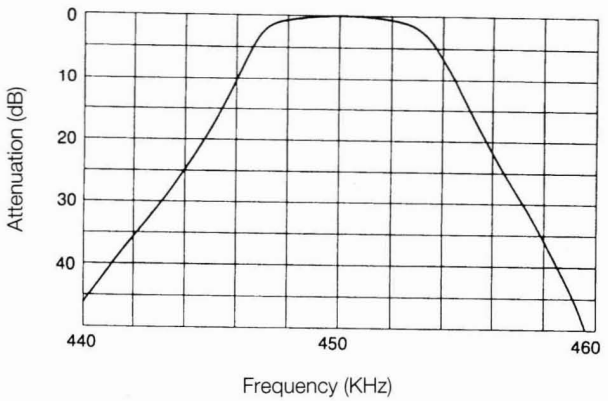
STANDARD FILTERS SELECTION GUIDE

TYPE CFMM4

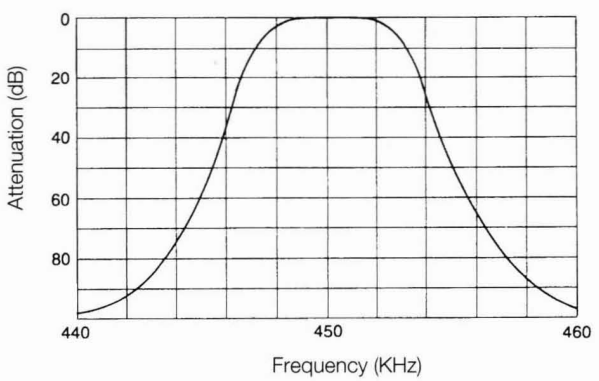
TOKO Part Number	Center Frequency (Fo) (KHz)	Bandwidth at 6 dB (KHz)	Selectivity at Fo±9KHz (dB)	Ripple in Passband (dB)	Insertion Loss (dB)	Input/Output Impedance (kΩ)
CFMM4						
ACFMM4-450A	450±1.0	4.0 min.	45.0 min.	2.0 max.	6.0 max.	3.0/3.0
ACFMM4-450B	450±1.0	5.5 min.	35.0 min.	2.0 max.	6.0 max.	3.0/3.0
ACFMM4-450C	450±1.0	8.0 min.	25.0 min.	2.0 max.	6.0 max.	3.0/3.0

Frequency Response

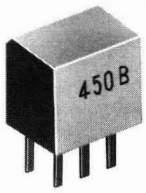
ACFMM4-450B

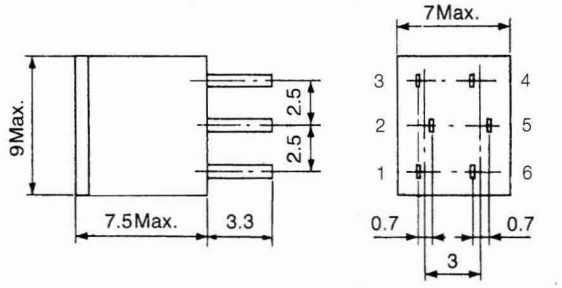


ACFMM4-450A



TYPE CFMD





Unit: mm

Description

- Two type CFMR filters integrated in a resin case to form a single 4 element AM IF filter
- Center frequency range: 450 — 470KHz
- Bandwidth at 6dB: 4 — 10KHz

Features

- Compact, low profile
- High selectivity, suited to a wide range of applications
- Low temperature coefficient
- Low spurious response

Applications

- AM radio-cassettes, stereo sets, telecommunications equipment
- CB transceivers

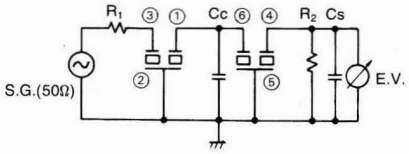
STANDARD FILTERS SELECTION GUIDE

TYPE CFMD

TOKO Part Number	Center Frequency (Fo)* (KHz)	Bandwidth at 6dB (KHz)	Selectivity at Fo±9KHz (dB)	Ripple in Pass Band (dB)	Insertion Loss (dB)	Coupling Capacitance (pF)	Input/Output Impedance (kΩ)
ACFMD-455Z	455±1.0	4.0±1.0	50.0 min.	2.0 max.	6.0 max.	330	1.5/1.5
ACFMD-455A	455±1.0	4.0 min.	45.0 min.	2.0 max.	6.0 max.	270	2.0/2.0
ACFMD-455B	455±1.0	6.0 min.	35.0 min.	2.0 max.	6.0 max.	180	3.0/3.0
ACFMD-455C	455±1.0	8.0 min.	25.0 min.	2.0 max.	6.0 max.	120	3.0/3.0
ACFMD-455D	455±1.0	10.0 min.	20.0 min.	2.0 max.	6.0 max.	56	3.0/3.0

* Center frequencies 450KHz, 455KHz, 459KHz, 460KHz, 468KHz available.

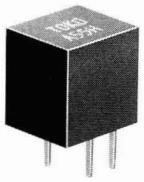
Test Circuit



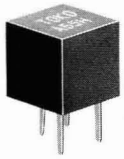
Test Conditions

R_1, R_2: Input-output impedance
Cc: Coupling capacitor (ext. conn.)
Cs: Stray capacitance
(less than 50pF, including EV)

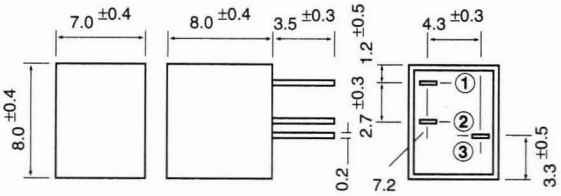
TYPE LFC,LFCM

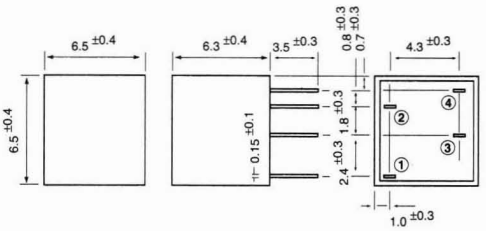


LFC



LFCM





Unit: mm

Description

- AM Ceramic filters are connected in a ladder structure and are available as either 4/6 element devices
- Bandwidths from 6 to 30 KHz

Features

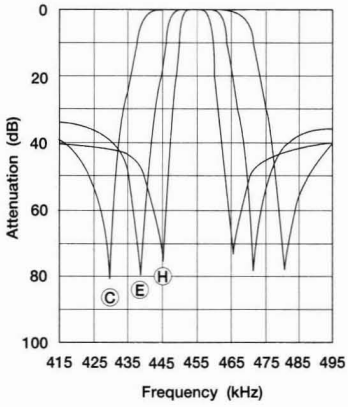
- 450, 455 KHz, (460KHz and 486KHz by Special request)
- High Selectivity
- Compact Package
- Version with group delay variations specified also available

Applications

- AM radio cassettes, AM stereo sets
- Cordless telephones, Pagers, Cellular phones
- Two way radios

Frequency Response

LFC / LFCM (4 element)



Bandwidth Rank:
C = ±12.5KHz
E = ±7.5KHz
H = ±3KHz

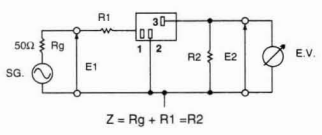
STANDARD FILTERS SELECTION GUIDE

TYPE LFC/LFCM

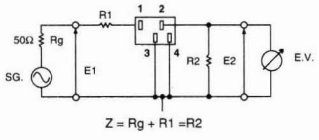
TOKO Part Number	Center * Frequency (KHz)	Bandwidth at 6 dB (KHz)	Bandwidth at 40 dB (KHz)	Attenuation fo ± 100 KHz (dB)	Insertion Loss (dB)	Input/Output Impedance (kΩ)
LFC						
ALFC455H	455±1.0	±3.0 min.	±9.0 min.	25.0 max.	6.0 max.	2.0
ALFC455G	455±1.0	±4.5 min.	±10.0 min.	25.0 max.	6.0 max.	2.0
ALFC455F	455±1.0	±6.0 min.	±12.5 min.	27.0 max.	6.0 max.	2.0
ALFC455E	455±1.0	±7.5 min.	±15.0 min.	27.0 max.	6.0 max.	1.5
BLFC455D	455±2.0	±10.0 min.	±20.0 min.	27.0 max.	4.0 max.	1.5
BLFC455C	455±2.0	±12.5 min.	±24.0 min.	27.0 max.	4.0 max.	1.5
BLFC455B	455±2.0	±15.0 min.	±30.0 min.	27.0 max.	4.0 max.	1.5
LFCM						
ALFCM455H	455±1.0	±3.0 min.	±9.0 min.	25.0 max	6.0 max.	2.0
ALFCM455G	455±1.0	±4.5 min.	±10.0 min.	25.0 max	6.0 max.	2.0
ALFCM455F	455±1.0	±6.0 min.	±12.5 min.	27.0 max	6.0 max.	2.0
ALFCM455E	455±1.0	±7.5 min.	±15.0 min.	27.0 max	6.0 max.	1.5
BLFCM455D	455±2.0	±10.0 min.	±20.0 min.	27.0 max	4.0 max.	1.5
BLFCM455C	455±2.0	±12.5 min.	±24.0 min.	27.0 max	4.0 max.	1.5
BLFCM455B	455±2.0	±15.0 min.	±30.0 min.	27.0 max	4.0 max.	1.5

* For 450KHz, substitute 450 for 455 in part number.

LFC Test circuit



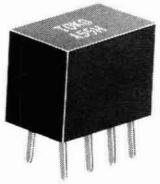
LFCM Test circuit



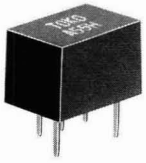
Test conditions

1. C includes test circuit capacitance.
2. R_1, R_2: Input-output impedance
   Cs: Stray capacitance
   (less than 50pF, including EV)

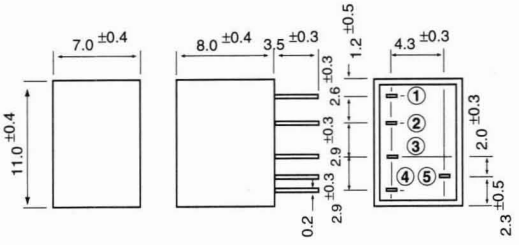
TYPE LFY,LFYM

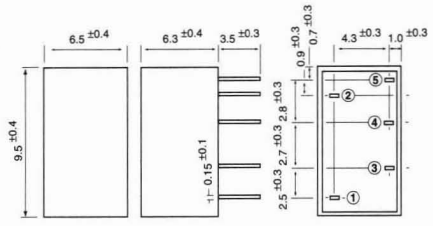


LFY



LFYM





Unit: mm

Description

- AM Ceramic filters are connected in a ladder structure and are available as either 4/6 element devices
- Bandwidths from 6 to 30 KHz

Features

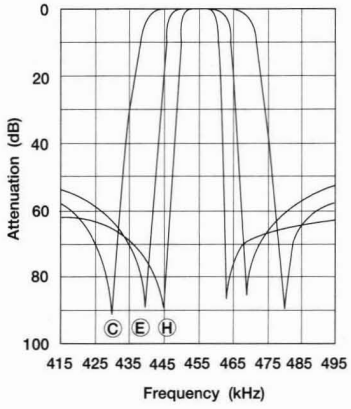
- 450, 455 KHz, (460KHz and 486KHz by Special request)
- High Selectivity
- Compact Package
- Version with group delay variations specified also available

Applications

- AM radio cassettes, AM stereo sets
- Cordless telephones, Pagers, Cellular phones
- Two way radios

Frequency Response

LFY / LFYM (6 element)



Bandwidth Rank:
C = ±12.5KHz
E = ±7.5KHz
H = ±3KHz

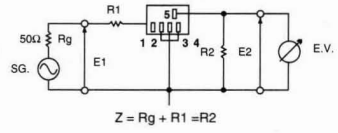
STANDARD FILTERS SELECTION GUIDE

TYPE LFY/LFYM

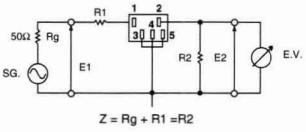
TOKO Part Number	Center * Frequency (KHz)	Bandwidth at 6 dB (KHz)	Bandwidth at 50 dB (KHz)	Attenuation fo ± 100 KHz (dB)	Insertion Loss (dB)	Input/Output Impedance (kΩ)
LFY						
ALFY455H	455±1.0	±3.0 min.	±9.0 min.	35.0 max.	6.0 max.	2.0
ALFY455G	455±1.0	±4.5 min.	±10.0 min.	35.0 max.	6.0 max.	2.0
ALFY455F	455±1.0	±6.0 min.	±12.5 min.	35.0 max.	6.0 max.	2.0
ALFY455E	455±1.0	±7.5 min.	±15.0 min.	35.0 max.	6.0 max.	1.5
BLFY455D	455±2.0	±10.0 min.	±20.0 min.	35.0 max.	4.0 max.	1.5
BLFY455C	455±2.0	±12.5 min.	±24.0 min.	35.0 max.	4.0 max.	1.5
BLFY455B	455±2.0	±15.0 min.	±30.0 min.	35.0 max.	4.0 max.	1.5
LFYM						
ALFYM455H	455±1.0	±3.0 min.	±9.0 min.	35.0 max	6.0 max.	2.0
ALFYM455G	455±1.0	±4.5 min.	±10.0 min.	35.0 max	6.0 max.	2.0
ALFYM455F	455±1.0	±6.0 min.	±12.5 min.	35.0 max	6.0 max.	2.0
ALFYM455E	455±1.0	±7.5 min.	±15.0 min.	35.0 max	6.0 max.	1.5
BLFYM455D	455±2.0	±10.0 min.	±20.0 min.	35.0 max	4.0 max.	1.5
BLFYM455C	455±2.0	±12.5 min.	±24.0 min.	35.0 max	4.0 max.	1.5
BLFYM455B	455±2.0	±15.0 min.	±30.0 min.	35.0 max	4.0 max.	1.5

* For 450KHz, substitute 450 for 455 in part number.

LFY Test circuit



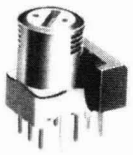
LFYM Test circuit

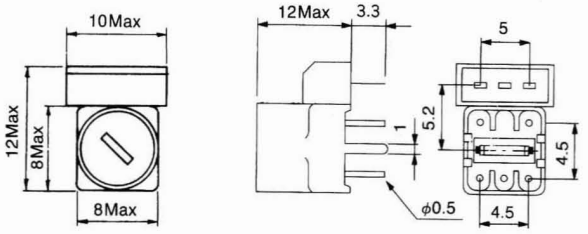


Test conditions

1. C includes test circuit capacitance.
2. R_1, R_2: Input-output impedance
   Cs: Stray capacitance
   (less than 50pF, including EV)

TYPE CFAZ





Unit: mm

Description

- AM IF filters combining matching coil with CFA type
- Center frequency range: 450 — 470KHz
- Bandwidth at 6dB: 5KHz min.

Features

- Can be preset if required
- High selectivity, suited to a wide range of applications
- Low temperature coefficient
- Low spurious response

Applications

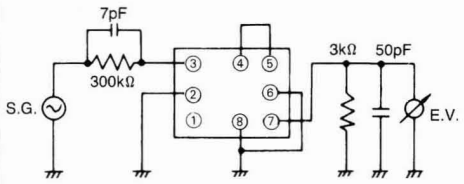
- AM radio-cassettes
- CB transceivers

STANDARD FILTERS SELECTION GUIDE

TYPE CFAZ

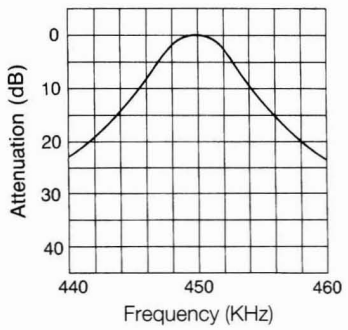
TOKO Part Number	Center Frequency (KHz)	Bandwidth at 6dB (KHz)	Selectivity at Fo±9KHz (dB)	Ripple in Pass Band (dB)	Input Level for 0.6mV Output (dB)	Note
BCFAZ-025	450±2.5	5.0 min.	18.0 min.	0.5 max.	75.5±3.0	
BCFAZ-015	455±2.5	5.0 min.	18.0 min.	0.5 max.	75.5±3.0	
BCFAZ-016	468±2.5	5.0 min.	18.0 min.	0.5 max.	75.5±3.0	

Test Circuit

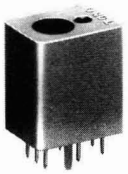


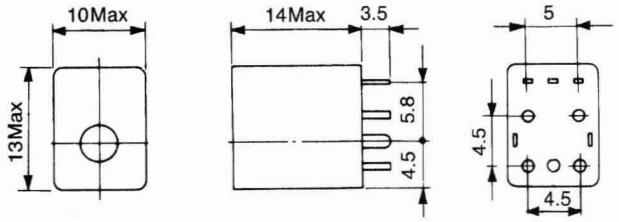
Frequency Response

BCFAZ — 025



TYPE CFMA





Unit: mm

Description

- AM IF filters combining matching coil with CFM2 type in resin case
- Center frequency range: 450 — 470KHz
- Bandwidth at 6dB: 2 — 11KHz

Features

- Can be preset if required
- High selectivity, suited to a wide range of applications
- Low temperature coefficient
- Low spurious response

Applications

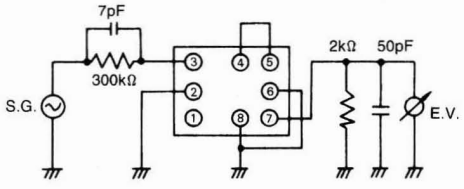
- AM radio-cassettes, AM stereo application sets
- CB transceivers

STANDARD FILTERS SELECTION GUIDE

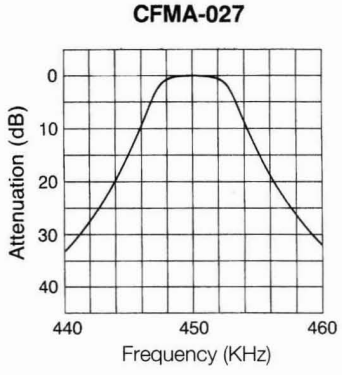
TYPE CFMA

TOKO Part Number	Center Frequency (kHz)	Bandwidth at 6dB (KHz)	Selectivity at Fo±9KHz (dB)	Ripple in Pass Band (dB)	Input Level for 0.6mV Output (dB)	Note
CFMA-027	450±1.5	5.0 min.	25.0 min.	1.0 max.	78.5±3.0	
CFMA-003	455±2.5	5.0 min.	25.0 min.	1.0 max.	78.5±3.0	
CFMA-050	459±1.5	5.0 min.	25.0 min.	1.0 max.	78.5±3.0	
CFMA-012	460±2.5	5.0 min.	25.0 min.	1.5 max.	78.5±3.0	
CFMA-008	468±2.5	5.0 min.	25.0 min.	1.0 max.	78.5±3.0	
PCFMA-211	450±1.0	9.5 min.	17.0 min.	0.7 max.	87.0±3.0	For AM stereo application

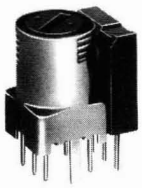
Test Circuit

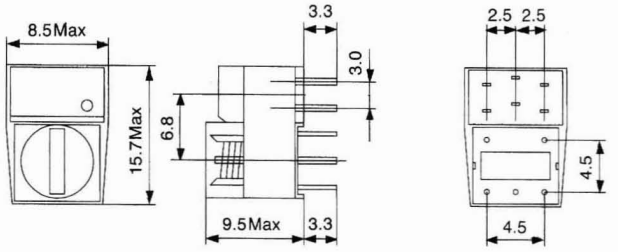


Frequency Response



TYPE CFMT





Unit: mm

Description

- AM IF filters combining matching coil and CFM2 type in heat shrunk tube
- Center frequency range: 450 — 470KHz
- Bandwidth at 6dB: 2 — 11KHz

Features

- Can be preset if required
- High selectivity, suited to a wide range of applications
- Low temperature coefficient
- Low spurious response

Applications

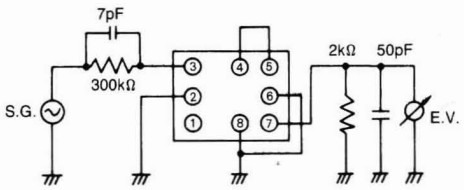
- AM radio-cassettes, AM stereo application sets
- CB transceivers

STANDARD FILTERS SELECTION GUIDE

TYPE CFMT

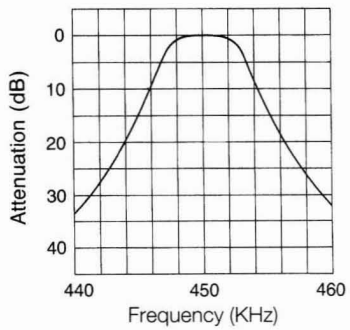
TOKO Part Number	Center Frequency (KHz)	Bandwidth at 6dB (KHz)	Selectivity at Fo±9KHz (dB)	Ripple in Pass Band (dB)	Input Level for 0.6mV Output (dB)	Note
PCFMT-023	450±1.2	6.0 min.	20.0 min.	1.0 max.	77.7±3.0	
PCFMT-049A	450±1.0	7.0 min.	24.0 min.	0.7 min.	90.0±3.0	For AM stereo application

Test Circuit

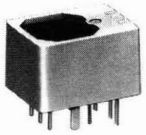


Frequency Response

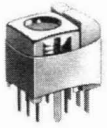
PCFMT — 023



TYPE CFML (triple-tuned)
CFMP (triple-tuned)

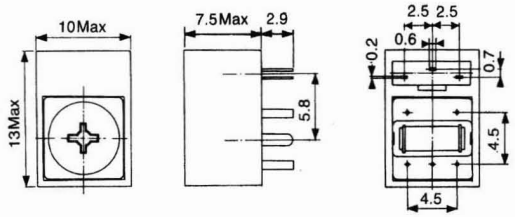


CFML
(triple-tuned)

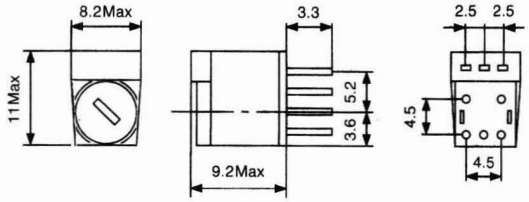


CFMP
(triple-tuned)

CFML (7PS+CFMR)



CFMP (7PS+CFM2)



Unit: mm

Description

- AM filters combining low profile matching coil with CFMR, CFM2 types.
- Center frequency range: 450 — 470KHz

Features

- Can be preset if required
- High selectivity, suited to a wide range of applications
- Low temperature coefficient
- Low spurious response

Applications

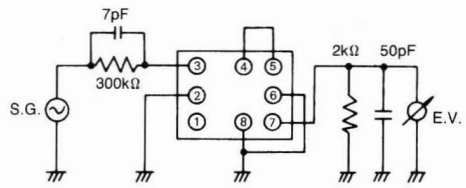
- AM radio-cassettes, high selectivity radio cassettes
- CB transceivers

STANDARD FILTERS SELECTION GUIDE

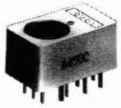
TYPE CFML, CFMP

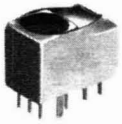
TOKO Part Number	Center Frequency (KHz)	Bandwidth at 6dB (KHz)	Selectivity at Fo±9KHz (dB)	Ripple in Pass Band (dB)	Input Level for 0.6mV Output (dB)	Note
ACFML-001	450±1.0	5.5 min.	25.0 min.	1.0 max.	94.5±3.0	
ACFMP-004	450±1.0	6.0 min.	25.0 min.	2.0 max.	94.5±3.0	

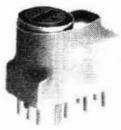
Test Circuit



TYPE CFMJ (quintuple-tuned)
CFMZ (quintuple-tuned)
CFMY (quintuple-tuned)


CFMJ


CFMZ


CFMY

Description

- AM IF filters combining matching coil and CFMD type in resin case, or in heat shrunk tube.
- Center frequency range: 450 — 470KHz

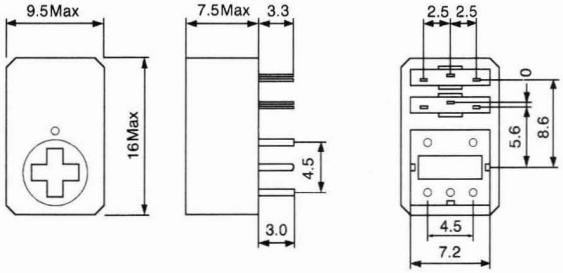
Features

- Can be preset if required
- High selectivity, suited to a wide range of applications
- Low temperature coefficient
- Low spurious response

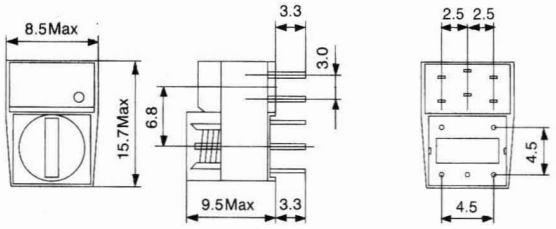
Applications

- AM radio-cassettes, high selectivity radio cassettes
- CB transceivers

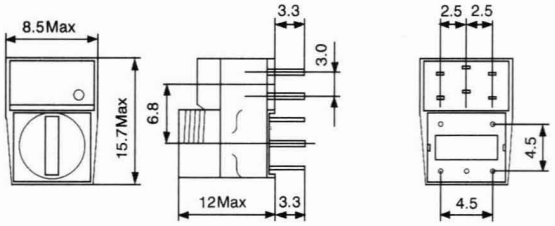
CFMJ



CFMZ



CFMY



Unit: mm

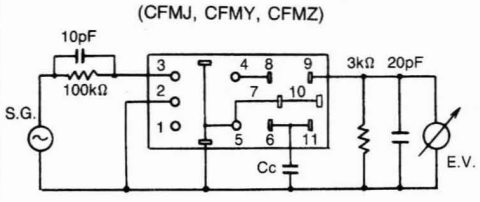
STANDARD FILTERS SELECTION GUIDE

TYPE CFMJ, CFMZ, CFMY

TOKO Part Number	Center Frequency (KHz)	Bandwidth at 6dB (KHz)	Selectivity at Fo±9KHz (dB)	Ripple in Pass Band (dB)	Input Level for 0.6mV Output (dB)	Note
PCFMJ-001	450±1.0	6.0 min.	35.0 min.	2.0 max.	75.0±3.0	
PCFMY-002	450±1.2	6.6 min.	40.0 min.	1.5 max.	84.0±3.0	
ACFMZ-001	450±1.2	5.0 min.	45.0 min.	2.0 max.	82.0±3.0	

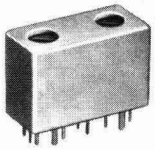
Test Circuit

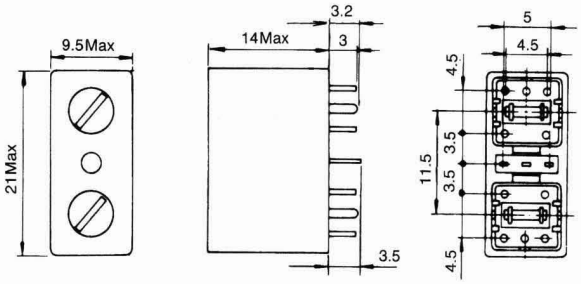
(CFMJ, CFMY, CFMZ)



Cc: 56 pF with CFMJ-001

TYPE CFMQ (quadruple-tuned)





Unit: mm

Description

- Quadruple-tuned AM IF filters combining matching coil and CFM2 in resin case.
- Center frequency range: 450 — 470KHz

Features

- Can be preset if required
- High selectivity, suited to a wide range of applications
- Low temperature coefficient
- Low spurious response

Applications

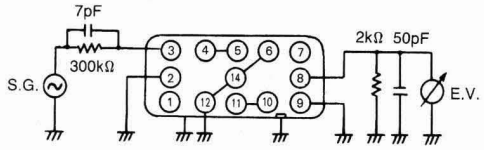
- AM radio cassettes, high selectivity radio cassettes
- CB transceivers

STANDARD FILTERS SELECTION GUIDE

TYPE CFMQ

TOKO Part Number	Center Frequency (KHz)	Bandwidth at 6dB (KHz)	Selectivity at Fo±9KHz (dB)	Ripple in Pass Band (dB)	Input Level for 0.6mV Output (dB)	Note
CFMQ-004A	450±1.5	5.5 min.	33.0 min.	1.0 max.	82.0±2.5	
CFMQ-001A	455±1.5	5.5 min.	33.0 min.	1.0 max.	82.0±3.0	
CFMQ-002A	460±1.5	5.5 min.	33.0 min.	1.0 max.	87.0±2.5	
CFMQ-010A	468±2.0	5.5 min.	32.0 min.	1.0 max.	85.0±2.0	

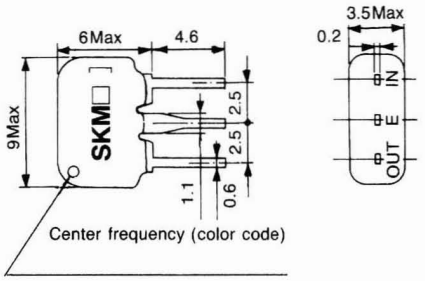
Test Circuit



Note: 50pF includes test circuit capacitance

TYPE CFSK Standard S Series

SKMA SKM0 SKM1 SKM2 SKM3 SKM4 SKM5 SKM6



Unit: mm

Description

- FM-IF step ceramic filters developed for use in compact, slimline sets.
- Increased number of bandwidth variations, ideal for BS tuner and digital communications equipment wide band, as well as European and U.S, FM stereo narrow band.
- Covers a wide range of application characteristics through the Standard S Series, Low Loss X Series and Group Delay G Series meeting a wide range of needs.

Features

- Compact and low profile (ideal for slimline sets)
- Low temperature coefficient and dispersion for reliable response
- High selectivity
- Low spurious response
- Independent terminal structure
- Can be supplied as kits with AM filters

Applications

- Radios, radio cassettes, car radios, home stereo
- CB transceivers

STANDARD FILTERS SELECTION GUIDE

TYPE CFSK Standard S Series

TOKO Part Number	Center Frequency* (Fo)	Bandwidth at 3dB (KHz)	Bandwidth at 20dB (KHz)	Insertion Loss (dB)	Spurious Response (dB)	Input/Output Impedance (Ω)
SK107MA-AE-10	See Color Code Table	380±50	720 max.	5.0 max.	30 min.	330/330
SK107M0-AE-10	See Color Code Table	330±50	680 max.	6.0 max.	30 min.	330/330
SK107M1-AE-10	See Color Code Table	280±50	650 max.	6.0 max.	30 min.	330/330
SK107M2-AE-20	See Color Code Table	230±50	600 max.	6.0 max.	40 min.	330/330
SK107M3-AE-20	See Color Code Table	180±40	520 max.	7.0 max.	40 min.	330/330
SK107M4-AE-20	See Color Code Table	150±40	400 max.	10.0 max.	40 min.	330/330
SK107M5-AE-10	See Color Code Table	110±30	350 max.	10.0 max.	30 min.	330/330
SK107M6-AE-10	See Color Code Table	50 min.	300 max.	12.0 max.	30 min.	330/330

* Center frequency tolerance: Standard ±30KHz; ±25KHz and ±20KHz also available
* Applicable center frequencies 10.3 - 11.5 MHz / Standard center frequencies 10.7, 10.52 MHz

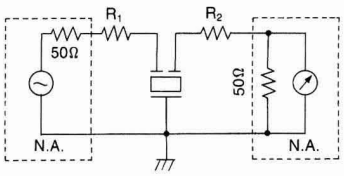
continued on next page

continued from previous page

COLOR CODE TABLE

Rank	Center Frequency	Color Code
A	10.70±0.03MHZ	None
B	10.67±0.03MHZ	Blue
C	10.73±0.03MHZ	Orange
D	10.64±0.03MHZ	Black
E	10.76±0.03MHZ	White

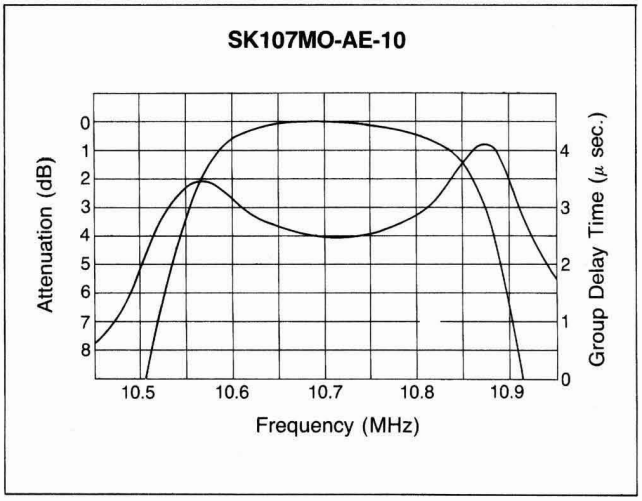
Test Circuit

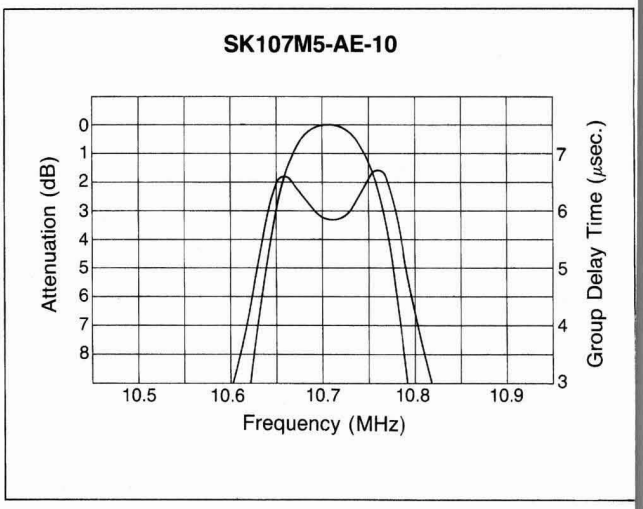


Test Conditions

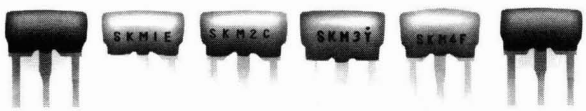
R_1: 280Ω
R_2: 280Ω
N.A.: HP4194A or equivalent
(Input impedance less than 15pF)

Frequency Response

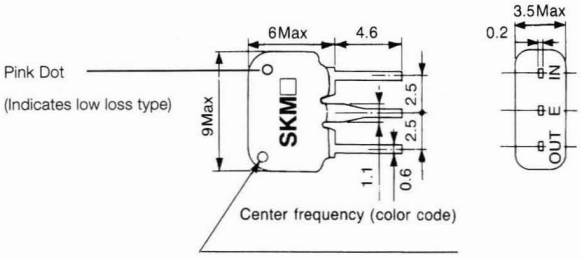




TYPE CFSK Low Loss X Series



SKM0 SKM1 SKM2 SKM3 SKM4 SKM5



Unit: mm

Description

- Low insertion loss design for lower gain dispersion in transceiver applications.

Features

- Compact and low profile (ideal for slimline sets)
- Low temperature coefficient and dispersion for reliable response
- High selectivity
- Low spurious response
- Independent terminal structure
- Can be supplied as kits with AM filters

Applications

- Cordless telephones, tuner packs, radio cassettes, car radios, compact portable radios
- CB transceivers

STANDARD FILTERS SELECTION GUIDE

TYPE CFSK Low Loss X Series

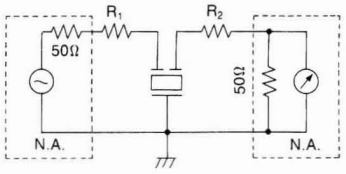
TOKO Part Number	Center Frequency (Fo)*	Bandwidth at 3dB (KHz)	Bandwidth at 20dB (KHz)	Insertion Loss (dB)	Spurious Response (dB)	Impedance (In/Out) (Ω)
SK107M0-AE-10X	See Color Code Table	330±50	680 max.	2.5±2.0	30 min.	330/330
SK107M1-AE-10X	See Color Code Table	280±50	650 max.	2.5±2.0	30 min.	330/330
SK107M2-AE-20X	See Color Code Table	230±50	600 max.	3.0±2.0	40 min.	330/330
SK107M3-AE-20X	See Color Code Table	180±40	520 max.	3.5±1.5	40 min.	330/330
SK107M4-AE-20X	See Color Code Table	150±40	400 max.	4.5±2.0	40 min.	330/330
SK107M5-AE-10X	See Color Code Table	110±30	350 max.	6.0±2.0	30 min.	330/330

COLOR CODE TABLE

Rank	Center Frequency*	Color Code
A	10.70±0.03MHZ	None
B	10.67±0.03MHZ	Blue
C	10.73±0.03MHZ	Orange
D	10.64±0.03MHZ	Black
E	10.76±0.03MHZ	White

* Standard center frequencies: 10.7, 10.52MHz
* Applicable center frequencies: 10.3MHz — 11.5MHz
* Center frequency tolerance: Standard ±30KHz; ±25KHz and ±20KHz also available

Test Circuit

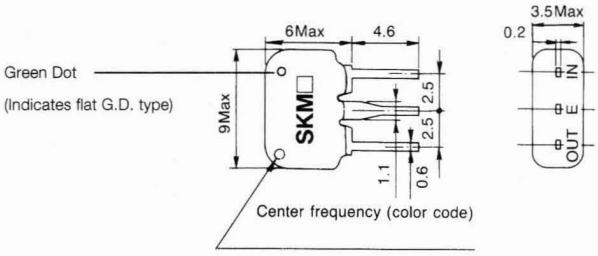


Test Conditions

R_1: 280Ω
R_2: 280Ω
N.A.: HP4194A or equivalent
(Input impedance less than 15pF)

TYPE CFSK Flat Group Delay G Series

SKM1 SKM2 SKM3 SKM4 SKM5



Unit: mm

Description

- High grade filters controlling 0.5μS bandwidth.

Features

- Compact and low profile (ideal for slimline sets)
- Low temperature coefficient and dispersion for reliable response
- High selectivity for excellent spurious response control
- Low spurious response
- Independent terminal structure
- Can be supplied as kits with AM filters

Applications

- Especially suited for digital cordless telephones and high grade stereo sets.
- MIDI audio systems and car stereo
- Digital telecommunications equipment

STANDARD FILTERS SELECTION GUIDE

TYPE CFSK Flat Group Delay G Series

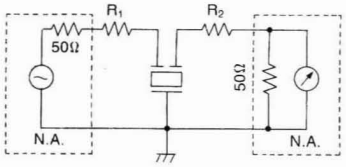
TOKO Part Number	Center Frequency (Fo)*	Bandwidth at 3dB (KHz)	Bandwidth at 20dB (KHz)	Insertion Loss (dB)	Spurious Response (dB)	G.T.D. Bandwidth 0.5μS (KHz)	Impedance (In/Out) (Ω)
SK107M1-AE-10G	See Color Code Table	280±50	650 max.	6.0 max	30 min.	Fo±80 min.	330/330
SK107M2-AE-20G	See Color Code Table	230±50	600 max.	6.0 max	40 min.	Fo±60 min.	330/330
SK107M3-AE-20G	See Color Code Table	180±40	520 max.	7.0 max	40 min.	Fo±45 min.	330/330
SK107M4-AE-20G	See Color Code Table	150±40	400 max.	10.0max	40 min.	Fo±35 min.	330/330
SK107M5-AE-10G	See Color Code Table	110±30	350 max.	10.0 max	30 min.	Fo±25 min.	330/330

COLOR CODE TABLE

Rank	Center Frequency*	Color Code
A	10.70±0.03MHZ	None
B	10.67±0.03MHZ	Blue
C	10.73±0.03MHZ	Orange
D	10.64±0.03MHZ	Black
E	10.76±0.03MHZ	White

* Standard center frequencies: 10.7MHz — 10.52MHz
* Applicable center frequencies: 10.3MHz — 11.5MHz
* Center frequency tolerance: Standard ±30KHz; ±25KHz and ±20KHz also available

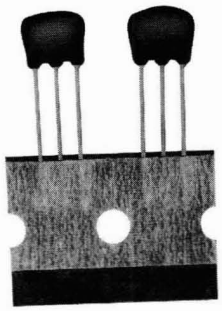
Test Circuit

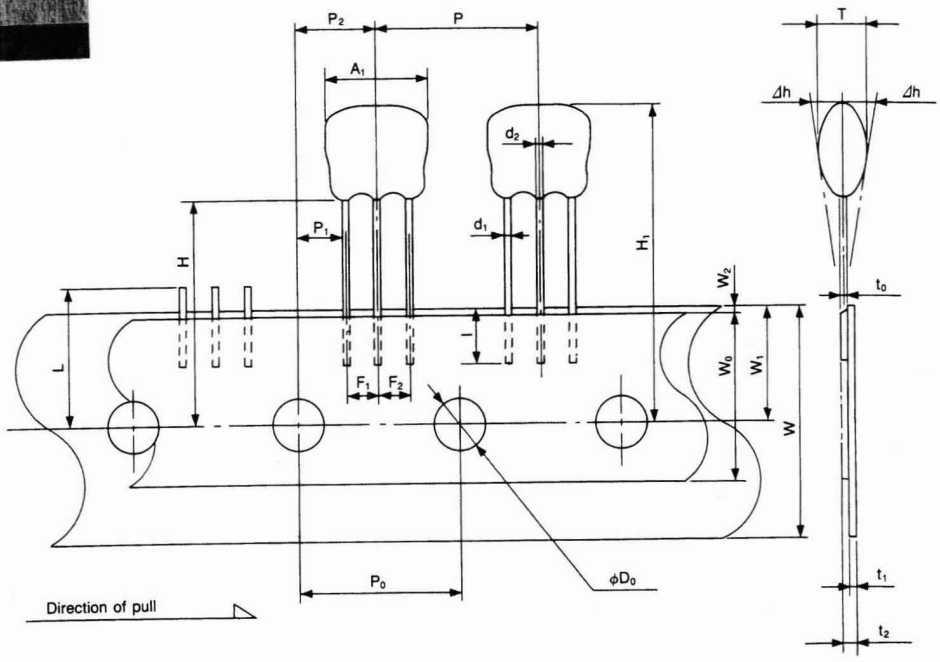


Test Conditions

R_1: 280Ω
R_2: 280Ω
N.A.: HP4194A or equivalent
(Input impedance less than 15pF)

TYPE CFSKP





Unit: mm

Marks	Dimensions
A_1	9.0max.
T	4.0 max.
d_1	0.5 ±0.05
d_2	0.05±0.05
t_0	0.02±0.05
P	12.7±1.0
P_0	12.7±0.3
P_1	3.85±0.5

Marks	Dimensions
P_2	6.35±1.3
F_1,F_2	$2.5^{+0.4}_{-0.1}$
Δh	2.0 max.
W	$18.0^{+1.0}_{-0.5}$
W_0	$13.0^{+1.0}_{-0.5}$
W_1	9.0±0.5
W_2	1.0 max
H	18.0^{+2}_{0}

Marks	Dimensions
H_1	27.0max.
l	3.0 min.
øD_0	4.0±0.2
t_2	1.5 min.
t_1	0.6±0.3
L	11.0 max.

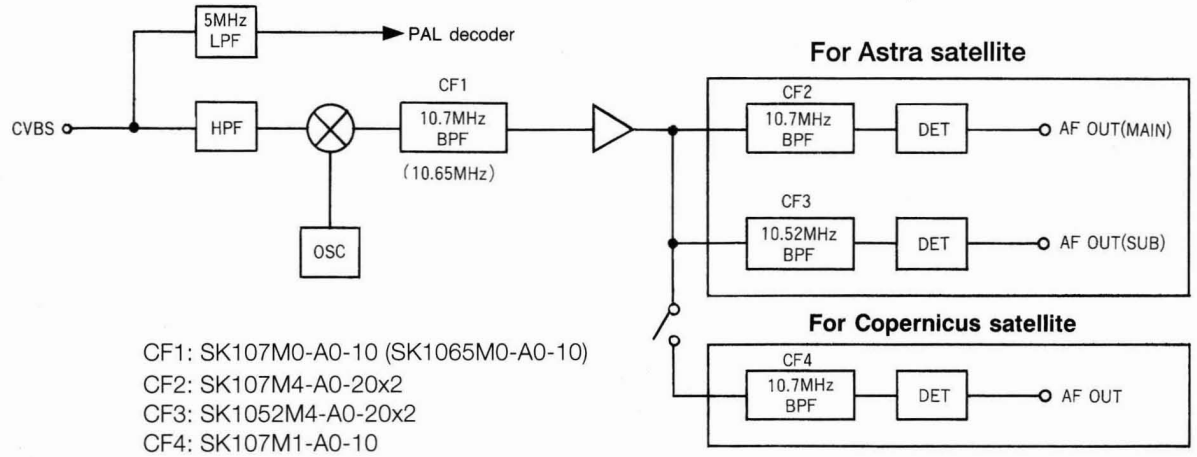
STANDARD FILTERS SELECTION GUIDE

TYPE CFSKP 10.7 MHz

TOKO Part Number	Bandwidth at 3dB (KHz)	Bandwidth at 20dB (KHz)	Insertion Loss (dB)	Spurious Response (dB)	Input/Output Impedance (Ω)
SKP107M1-AE-10	280±50	650 max.	6.0 max.	30 min.	330/330
SKP107M2-AE-20	230±50	600 max.	6.0 max.	40 min.	330/330
SKP107M3-AE-20	180±40	520 max.	7.0 max.	40 min.	330/330
SKP107M4-AE-20	150±40	400 max.	10.0 max.	40 min.	330/330

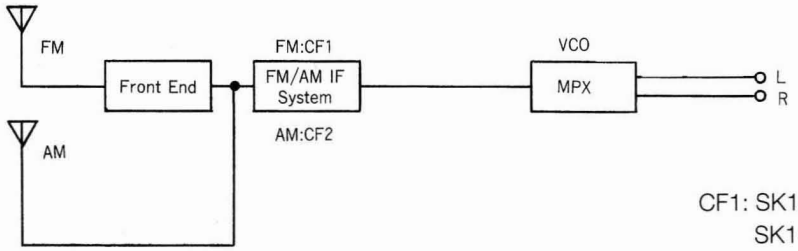
Ceramic Filter Application Examples

■ DBS tuner sound IF circuit



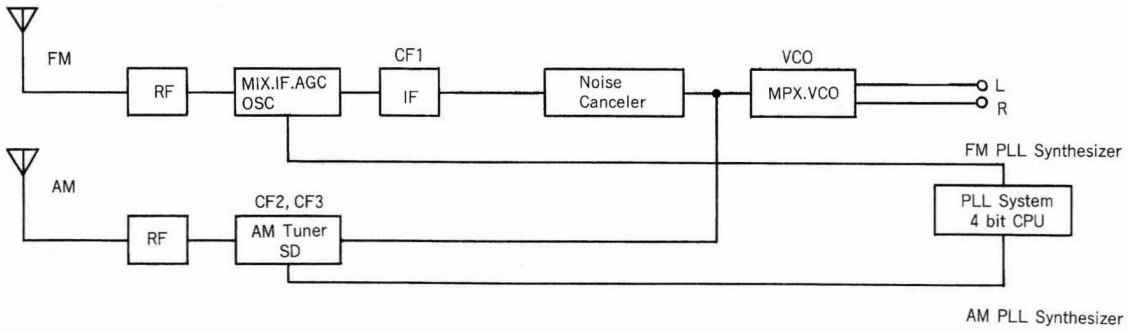
CF1: SK107M0-A0-10 (SK1065M0-A0-10)
CF2: SK107M4-A0-20x2
CF3: SK1052M4-A0-20x2
CF4: SK107M1-A0-10

■ CD radio cassette AM/FM IF circuit



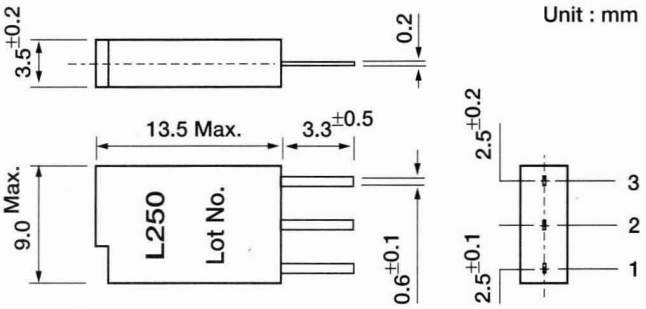
CF1: SK107M2-A0-20x2 or
SK107M1-A0-10x2
CF2: BCFAZ-015 or (low cost)
CFMA-003 (high selectivity)
VCO: CMU2-456A## (FM multi-VCO)

■ Electronically tuned car radio AM/FM IF circuit



CF1: SK107M3-AO20-20Gx2
VCO: CMU2-456A##
CF2: ACFMJ-001 or PCFMA-181
CF3: CMU1-450A01 (SD)

TYPE CRL (KHz Range)



Description

- External C, KHz band ceramic oscillating elements using TOKO's experience in piezo materials, precision manufacturing and soldering technology.
- Applicable oscillating frequency range: 220 — 380KHz

Features

- Precise oscillating frequency without adjustment.
- Soldered connections as opposed to spring tension technique for higher reliability.
- May be used with a variety of ICs.

Applications

- Reference signal oscillators for microprocessors (household electronics, OA equipment).
- Digital applications equipment including measuring instruments, communications equipment, toys, etc.

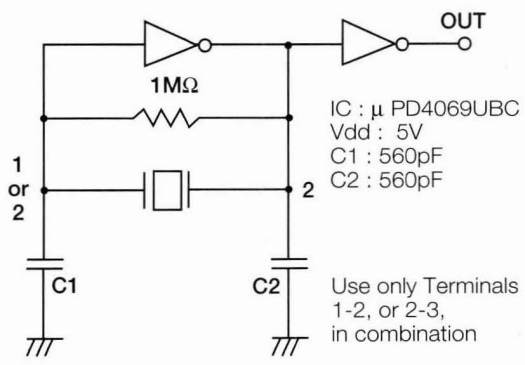
STANDARD RESONATORS SELECTION GUIDE

TYPE CRL

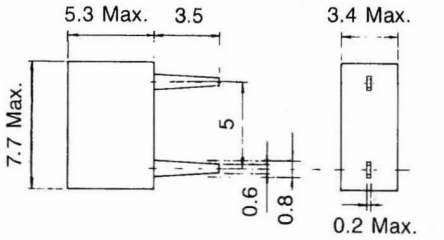
TOKO Part Number	Oscillating Frequency (Fosc)* (KHz)	Resonance Impedance (Ω)	Fosc Static Temp. Stability (–20°C~+80°C)	External Capacitor C_1 (pF)	External Capacitor C_2 (pF)
KCRL250	250kHz±3.0%	400 max.	±0.3%	560	560
KCRL262	262kHz±3.0%	400 max.	±0.3%	560	560
KCRL330	330kHz±3.0%	400 max.	±0.3%	560	560

* Oscillating frequency tolerance can be designed to desired level. TOKO performs matching evaluations for all types of IC. Please contact TOKO regarding applicable products.

Oscillating frequency test circuit



TYPE CRK (KHz Range)



Unit: mm

Description

- C external KHz band ceramic oscillating elements using TOKO's experience in piezo material, precision manufacturing and soldering technology.
- Applicable oscillating frequency range: 380 — 680KHz

Features

- Precise oscillating frequency without adjustment
- Soldered connections as opposed to spring tension technique for higher reliability.
- May be used with a variety of ICs.

Applications

- Reference signal oscillators for microprocessors (household electronics, OA equipment).
- Reference signal oscillators for remote controls (TVs, VCRs, air-conditioners, CD players, lighting).
- Digital applications equipment including measuring instruments, communications equipment, toys, etc.

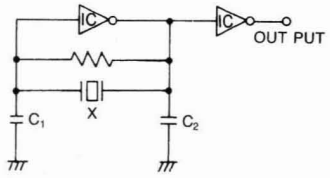
STANDARD RESONATORS SELECTION GUIDE

TYPE CRK

TOKO Part Number	Oscillating Frequency (Fosc)* (KHz)	Resonance Impedance (Ω)	Fosc Static Temp. Stability (–20°C~+80°C)	External Capacitor C_1 (pF)	External Capacitor C_2 (pF)
DCRK400	400KHz±0.5%	400 max.	±0.3%	560	200
DCRK455	455KHz±0.5%	400 max.	±0.3%	560	200
DCRK480	480KHz±0.5%	400 max.	±0.3%	560	200
DCRK500	500KHz±0.5%	400 max.	±0.3%	560	200
DCRK600	600KHz±0.5%	400 max.	±0.3%	470	200
DCRK680	680KHz±0.5%	400 max.	±0.3%	470	200

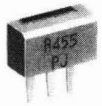
* Oscillating frequency tolerance can be designed to desired level. TOKO performs matching evaluations for all types of IC. Please contact TOKO regarding applicable products.

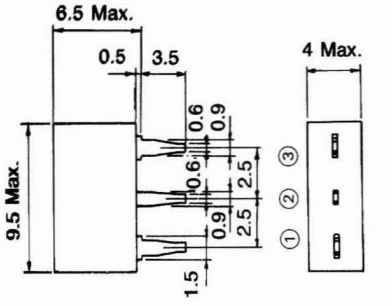
Oscillating frequency test circuit



IC : 1/6 μPD4069
V_{DD} : +5V
X : Ceramic element
C_1, C_2 : External capacitors

TYPE CRA (KHz band with built-in capacitors)





Unit: mm

Description

- KHz band ceramic oscillators with built-in capacitors.
- Applicable oscillating frequency range: 430 — 500KHz

Features

- Precise oscillating frequency without adjustment.
- Load capacitors (C_1, C_2) not required .
- May be used with a variety of ICs.

Applications

- Reference signal oscillators for microprocessors (household electronics, OA equipment).
- Reference signal oscillators for remote controls (TVs, VCRs, air-conditioners, CD players, lighting).
- Digital applications equipment including measuring instruments, communications equipment, toys, etc.

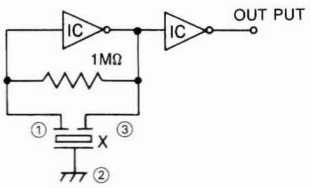
STANDARD RESONATORS SELECTION GUIDE

TYPE CRA

TOKO Part Number	Oscillating Frequency (Fosc)* (KHz)	Resonance Impedance (Ω)	Fosc Static Temp. Stability (–20°C~+80°C)	External Capacitor C_1 (pF)	External Capacitor C_2 (pF)	Note
DCRA440	440KHz±0.5%	3.0 max.	±0.3%	Built-in	Built-in	External appearance differs by part numbers
DCRA455	455KHz±0.5%	3.0 max.	±0.3%	Built-in	Built-in	
DCRA480	480KHz±0.5%	3.0 max.	±0.3%	Built-in	Built-in	
DCRA500	500KHz±0.5%	3.0 max.	±0.3%	Built-in	Built-in	

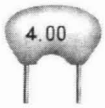
* Oscillating frequency tolerance can be designed to desired level. TOKO performs matching evaluations for all types of IC. Please contact TOKO regarding applicable products.

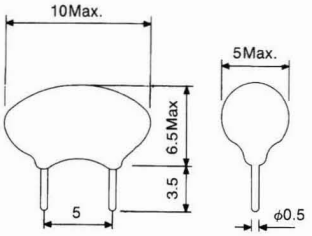
Oscillating frequency test circuit



IC :1/6 μPD4069UBC
V_{DD} : +5V
X : Ceramic element

TYPE CRHF (MHz Range)
Available on tape





Unit: mm

Description

- External capacitor MHz band ceramic oscillators for microprocessors and infra-red remote controls, telephone D.T.M.F., reference signal oscillators, etc.
- Applicable oscillating frequency range: 2.5 — 6.0MHz

Features

- Precise oscillating frequency without adjustment.
- May be used with a variety of ICs.
- Suitable for taping

Applications

- Reference signal oscillators for microprocessors (household electronics, OA equipment).
- Reference signal oscillators for remote controls (TVs, VCRs, air-conditioners, CD players, lighting).
- Digital applications equipment including measuring instruments, communications equipment, toys, etc.

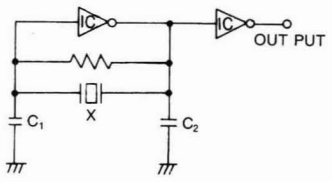
STANDARD RESONATORS SELECTION GUIDE

TYPE CRHF

TOKO Part Number	Oscillating Frequency (Fosc)*	Resonance Impedance (Ω)	Fosc Static Temp. Stability (–20°C~+80°C)	External Capacitor C_1 (pF)	C_2 (pF)
DCRHF3.58	3.58MHz±0.5%	30 max.	±0.4%	30	30
DCRHF4.00	4.00MHz±0.5%	30 max.	±0.4%	30	30
DCRHF4.19	4.19MHz±0.5%	30 max.	±0.4%	30	30
DCRHF5.00	5.00MHz±0.5%	30 max.	±0.4%	30	30
DCRHF6.00	6.00MHz±0.5%	30 max.	±0.4%	30	30

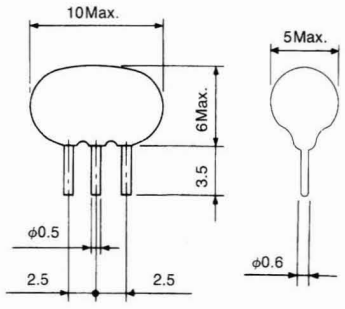
* Oscillating frequency tolerance can be designed to desired level. TOKO performs matching evaluations for all types of IC. Please contact TOKO regarding applicable products.

Oscillating Frequency Test Circuit



IC :1/6 μPD4069
V_{DD} :+5V
X :Ceramic element
C_1, C_2 :External capacitors

TYPE CRHT (MHz band with built in capacitors)
Available on tape and reel



Unit: mm

Description
- Built-in capacitor MHz band ceramic oscillators for microprocessors and infra-red remote controls, telephone D.T.M.F., reference signal oscillators, etc.
- Applicable oscillating frequency range: 2.5 — 6.0MHz

Features
- Precise oscillating frequency without adjustment.
- Load capacitors (C_1, C_2) built-in
- May be used with a variety of ICs.
- Available on tape and reel

Applications
- Reference signal oscillators for microprocessors (household electronics, OA equipment).
- Reference signal oscillators for remote controls (TVs, VCRs, air-conditioners, CD players, lighting).
- Digital applications equipment including measuring instruments, communications equipment, toys, etc.

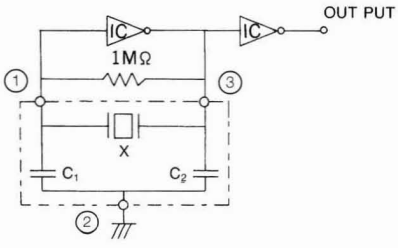
STANDARD RESONATORS SELECTION GUIDE

TYPE CRHT

TOKO Part Number	Oscillating* Frequency (Fosc)	Resonance Impedance (Ω)	Fosc Static Temp. Stability (–20°C~+80°C)	External Capacitor C_1 (pF)	External Capacitor C_2 (pF)
DCRHT3.58	3.58MHz±0.5%	30 max.	±0.4%	Built-in	Built-in
DCRHT4.00	4.00MHz±0.5%	30 max.	±0.4%	Built-in	Built-in
DCRHT4.19	4.19MHz±0.5%	30 max.	±0.4%	Built-in	Built-in
DCRHT5.00	5.00MHz±0.5%	30 max.	±0.4%	Built-in	Built-in
DCRHT6.00	6.00MHz±0.5%	30 max.	±0.4%	Built-in	Built-in

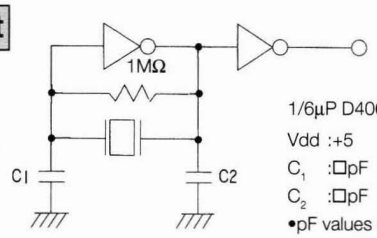
* Oscillating frequency tolerance can be designed to desired level. TOKO performs matching evaluations for all types of IC. Please contact TOKO regarding applicable products.

Oscillating Frequency Test Circuit



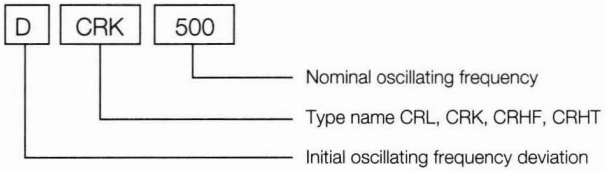
IC :1/6 μPD4069UBC
V_{DD} :+5V
X :Ceramic element

Standard Test Circuit



1/6μP D4069UBC
Vdd :+5
C_1 :□pF
C_2 :□pF
•pF values of C_1 and C_2 given in tables on p.219, 220 and 222

Part No. Scheme



(%)

A	B	C	D	E	F	G	H	No character level	J	K
±0.2	±0.3	±0.4	±0.5	±0.6	±0.7	±0.8	±0.9	±1.0	±2.0	±3.0

Mechanical and weathering characteristics

Item	Test Conditions
Shock resistance	1,000g shock applied once in X, Y and Z axes; satisfie conditions chart below.
Vibration resistance	One cycle defined as vibration range 1.5mm at frequency 55—500Hz applied for 15 min. in X, Y, Z axes; satisfie conditions chart after 8 cycles.
Solder heat resistance	Immersed up to point 2mm from terminal root in solder tank at 270±5°C for 10±1 sec.; left at room temperature for 1 hour; satisfie conditions chart.
Terminal strength	Tension Test=No breakage should be observed after applying 500 gwt force in the direction of pulling out the terminal for 10 seconds. Bending Test=No breakage should be observed after applying 200 gwt force vertically and in the direction of pulling out the terminal in both ways.
Humidity resistance	Placed in tank at 40°C, 90—95% RG for 96 hours; left at room temperature for 1 hour; satisfied conditions chart.
Heat resistance	Placed in tank at 85±2°C for 1,000 hours; left at room temperature for 1 hour; satisfied conditions chart
Cold resistance	Placed in tank at–40±2°C for 1,000 hours; left at room temperature for 1 hour; satisfie conditions chart.
Voltage resistance	50V DC for 1 min. between terminals; connections unharmed.

	CRL, CRK	CRHF, CRHT
Change in Oscillating Frequency	±0.3%	±0.5%

Precautions for Use

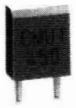
When using TOKO oscillators, please take into account the following:
(1) Spurious oscillation: Oscillation in other modes, or at high frequency.
(2) Initial oscillation voltage: Lowest voltage at which oscillation initiated when source voltage stepped up starting from OV
(3) Relation to external capacitor oscillation output voltage
(4) Relation to external capacitor oscillating frequency
(5) Effect of dispersion in IC characteristics

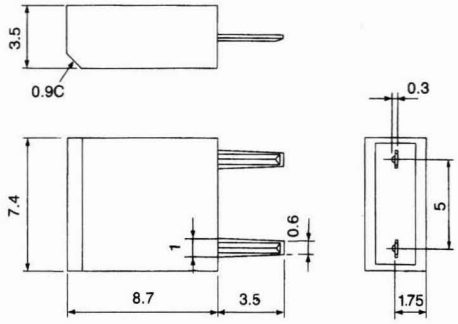
Care is required as (1) and (2) may vary greatly depending on external capacitor values. These may also vary depending on the IC used in the assembly.

Recommended Conditions

The above tests and recommended conditions have been provided as guidelines to help you use TOKO components with confidence under ideal conditions. Please do not hesitate to contact us for further information.

TYPE CMU1





Unit: mm

Description

- Ceramic oscillators for search stop signal detection in AM electronically tuned radios.
- Oscillating frequencies: 450, 459, 468KHz

Features

- Precise oscillating frequency
- Stable, with low dispersion
- Can be supplied as sets with IF step filters

Applications

- Electronically tuned AM radio cassettes

STANDARD FILTERS SELECTION GUIDE

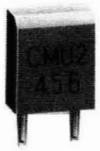
TYPE CMU1

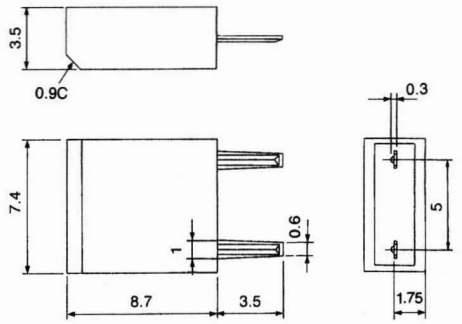
TOKO Part Number	Center Frequency (KHz)	ΔF (Fa-Fr) (KHz)	Resonance Impedance (Ω)	Static Capacitance	Withstanding Voltage
CMU1-450A01	450±0.8	9±2.0	30 max.	360pF±20%	50V DC 1minute
CMU1-459A01	459±0.8	9±2.0	30 max.	340pF±20%	50V DC 1minute
CMU1-468A01	468±0.8	9±2.0	30 max.	320pF±20%	50V DC 1minute

Test Conditions

Standards for oscillating frequency (Fr), resonance resistance (Ro), ΔF (difference between counter oscillating frequency Fa and oscillating frequency Fr), and static capacitance Cf are all taken as values measured by YHP 4192A impedance analyzer.

TYPE CMU2





Unit: mm

Description

- VCO ceramic oscillators for FM stereo MPX
- Oscillating frequency: 456KHz

Features

- Eliminates tuning for MPX
- Can be supplied as sets with IF step filters

Applications

- Radio sets
- Wired radio broadcast equipment

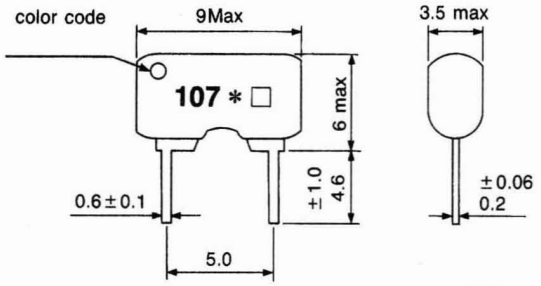
STANDARD RESONATORS SELECTION GUIDE

TYPE CMU2

TOKO Part Number	Oscillating Frequency Precision (+25°C)	Compatible IC Models*
CMU2-456A01	19.000KHz±38Hz	TA8122AN (TOSHIBA)
CMU2-456A02	19.000KHz±38Hz	TA8132AN (TOSHIBA)
CMU2-456A03	19.000KHz±38Hz	TA7413AP (TOSHIBA)
CMU2-456A10	18.950KHz±38Hz	LA3410 (SANYO)
CMU2-456A11	19.000KHz±38Hz	LA3430 (SANYO)
CMU2-456A12	456.0KHz±0.2%	LA1886 (SANYO)
CMU2-456A13	456.0KHz±0.2%	LA1851 (SANYO)
CMU2-456A70	456.0KHz±0.2%	TDA1591T (PHILIPS)

* Please ask for other applicable MPX IC numbers

TYPE CDF Discriminators



Unit: mm

Description

- May be used in combination with IF step filters to remove need for adjustment.

Features

- Compact and low profile (ideal for slimline sets)
- Low temperature coefficient for low dispersion and stable characteristics
- Independent terminal structure
- Can be supplied as kits with AM/FM filters

Applications

- Ideal for small sets, general purpose radios, and headphone stereos.
- CB transceivers

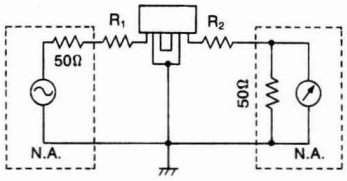
STANDARD DISCRIMINATORS SELECTION GUIDE

TYPE CDF Discriminators

TOKO Part Number*	Center Frequency (Fo)	(rank color code)	Audio Frequency Output Voltage	Distortion at Fo±90KHz	3dB band width	Applicable IC*
CDF107B-A0-001C	10.70±0.03MHZ	(None)	40mV min.	1.0% max.	250KHz min.	CXA1019X

* Ceramic discriminators are classified by exclusive IC numbers. Please ask for TOKO Part Number.

Test Circuit



Center Frequency:
Input frequency such that the potential between DC (–) and DC (+) in the test circuit is OV.

Input Conditions:
MOD: 400Hz, DEV: 22.5KHz, INPUT: 90dBμ

TOKO

Tuning Tools for Adjustable Coils List

TOKO Parts for Application Notes

CONTENTS

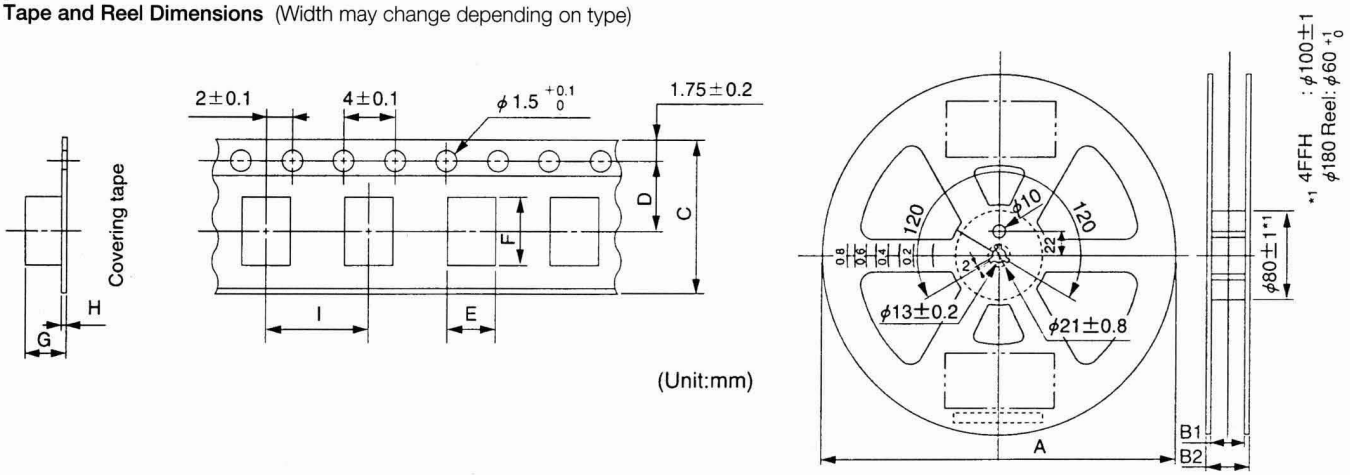
Packing of Coils and Filters 230

Tuning Tools for Adjustable Coils 233

Application Notes 234

Taping for Automatic Insertion of SMT Coils

Tape and Reel Dimensions (Width may change depending on type)



Surface Mount Devices/Adjustable & Fixed

This ever expanding assortment of products and TOKO's unsurpassed quality control, provides a component that not only performs, but just as importantly, allows the use of a variety of placement and soldering equipment necessary for the FLEXIBLE MANUFACTURING PLANT .
Various packaging schemes are available. In addition to bulk, tape and reel and magazines are offered for high volume insertion equipment. The chart on the next page lists the packaging details for TOKO's SMD coils.

Notes:

- There are at least 10 blank spaces (80mm each) at both ends of the tape which do not include the coils.
- The protective tape should not cover the holes nor be shifted to the sides. In addition, the tape should not be removed during transportation.
- The deficiency per reel is within 0.5%.
- The coils are positioned with the bonding surface facing outward.
- Dimensional tolerances conform to the standards of Electronic Industries Association of Japan (EIAJ), RC-1009B, for Taping Dimensions (Chip Form) of Electronic Components.

continued on next page

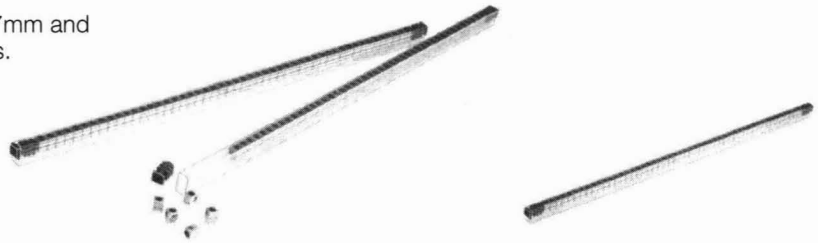
continued from previous page

SURFACE MOUNTING TYPE REEL/TAPE LIST

Type	Reel Size (mm)				Tape Size (mm)						Qty
	A	B1	B2	C	D	E	F	G	H	I	1 Reel
33CS	ø330	13.5±0.5	17.5±1	12.0±0.3	5.5±0.05	4.9±0.1	4.2±0.1	4.2±0.1	0.4±0.05	8.0±0.1	2000
36CS	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.1	5.2±0.1	6.9±0.1	4.2±0.1	0.4±0.05	8.0±0.1	2000
43CS,43FS	ø330 ø180	13.5±0.5	17.5±1	12.0±0.3	5.5±0.05	3.6±0.1	5.1±0.1	3.2±0.1	0.3±0.05	8.0±0.1	2000/500
5CA	ø330	13.5±0.5	17.5±1	12.0±0.3	5.5±0.05	6.9±0.1	6.4±0.1	5.5±0.1	0.4±0.05	8.0±0.1	2000
5CT	ø330 ø180	13.5±0.5	17.5±1	12.0±0.3	5.5±0.05	5.5±0.1	5.5±0.1	5.5±0.1	0.4±0.05	8.0±0.1	1500/300
5CDL	ø330 ø180	13.5±0.5	17.5±1	12.0±0.3	5.5±0.05	5.4±0.1	5.9±0.1	2.4±0.1	0.4±0.05	8.0±0.1	3000/500
5CDM	ø330	13.5±0.5	17.5±1	12.0±0.3	5.5±0.05	5.4±0.2	6.2±0.1	2.9±0.1	0.4±0.05	8.0±0.1	3000
5CBL	ø330 ø180	13.5±0.5	17.5±1	12.0±0.3	5.5±0.05	5.0±0.1	6.5±0.2	2.6±0.1	0.4±0.05	8.0±0.1	3000/500
5CBM	ø330	13.5±0.5	17.5±1	12.0±0.3	5.5±0.05	5.0±0.2	6.5±0.1	2.8±0.1	0.3±0.05	8.0±0.1	3000
5CD	ø330 ø180	13.5±0.5	17.5±1	12.0±0.3	5.5±0.05	5.5±0.1	5.5±0.2	5.0±0.1	0.4±0.05	8.0±0.1	1500/400
5CB, 5CBG	ø330 ø180	13.5±0.5	17.5±1	12.0±0.3	5.5±0.05	5.5±0.1	5.5±0.1	5.0±0.1	0.4±0.05	8.0±0.1	1500/400
5CE	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.1	6.5±0.1	6.4±0.1	5.6±0.1	0.4±0.05	12.0±0.1	1000
5FS	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.1	5.8±0.1	6.4±0.1	8.4±0.1	0.4±0.05	12.0±0.1	500
4FUS	ø330	13.5±0.5	17.5±1	12.0±0.3	5.5±0.05	5.2±0.1	6.4±0.1	5.3±0.1	0.4±0.05	8.0±0.1	1500
4FS	ø330	13.5±0.5	17.5±1	12.0±0.3	5.5±0.05	5.2±0.1	6.4±0.1	5.3±0.1	0.4±0.05	8.0±0.1	1500
4FW	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.1	6.4±0.1	10.1±0.1	5.3±0.1	0.4±0.05	8.0±0.1	1500
4FT	ø330	25.5±0.5	29.5±1	24.0±0.3	11.5±0.1	6.4±0.1	14.75±0.1	5.3±0.1	0.4±0.05	8.0±0.1	1000
4FNS	ø330	13.5±0.5	17.5±1	12.0±0.3	5.5±0.05	5.5±0.1	6.4±0.1	5.3±0.1	0.3±0.05	8.0±0.1	1500
4FNW	ø330	25.5±0.5	29.5±1	24.0±0.3	11.5±0.1	6.4±0.1	11.1±0.1	5.3±0.1	0.4±0.05	8.0±0.1	1500
4FNT	ø330	25.5±0.5	29.5±1	24.0±0.3	11.5±0.1	6.4±0.1	16.7±0.1	5.3±0.1	0.4±0.05	8.0±0.1	1000
4FJS	ø330	13.5±0.5	17.5±1	12.0±0.3	5.5±0.05	5.2±0.1	6.4±0.1	4.2±0.1	0.4±0.05	8.0±0.1	2000
4FJW	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.05	6.4±0.1	10.1±0.1	4.2±0.1	0.4±0.05	8.0±0.1	2000
4FJT	ø330	25.5±0.5	29.5±1	24.0±0.3	11.5±0.1	6.4±0.1	14.75±0.1	4.2±0.1	0.4±0.05	8.0±0.1	1000
10RF	ø330	25.5±0.5	29.5±1	24.0±0.3	11.5±0.1	10.4±0.1	10.1±0.1	5.8±0.1	0.4±0.05	16.0±0.1	750
12RF	ø330	25.5±0.5	29.5±1	24.0±0.3	11.5±0.1	12.1±0.1	12.1±0.1	6.8±0.1	0.4±0.05	16.0±0.1	500
MC153	ø330	25.5±0.5	29.5±1	24.0±0.3	11.5±0.1	5.4±0.1	13.9±0.1	5.2±0.1	0.4±0.05	8.0±0.1	1500
MC152	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.1	5.4±0.1	7.4±0.1	5.3±0.1	0.4±0.05	8.0±0.1	1500
MC152 Shield Case	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.1	5.9±0.1	7.4±0.1	5.4±0.1	0.4±0.05	8.0±0.1	1500
4CHW	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.1	6.4±0.1	10.0±0.2	4.5±0.2	0.4±0.05	8.0±0.1	2000
5CHLW	ø330	25.5±0.5	29.5±1	24.0±0.3	11.5±0.1	8.0±0.1	11.2±0.1	5.0±0.1	0.4±0.05	12.0±0.1	1000/250
5CHT	ø330	25.5±0.5	29.5±1	24.0±0.3	11.5±0.1	7.8±0.1	17.4±0.1	6.5±0.1	0.4±0.05	12.0±0.1	750
5CHW	ø330	25.5±0.5	29.5±1	24.0±0.3	11.5±0.1	7.8±0.1	11.6±0.1	6.5±0.1	0.4±0.05	12.0±0.1	750
6DM	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.1	8.0±0.1	6.9±0.1	6.45±0.1	0.4±0.05	12.0±0.1	800
B5FL	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.1	6.9±0.1	6.4±0.1	3.95±0.1	0.4±0.05	12.0±0.1	1500
B5F	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.1	6.9±0.1	6.4±0.1	4.6±0.1	0.4±0.05	12.0±0.1	1000
6CDA	ø330	17.5±0.5	21.5±1	12.0±0.3	7.5±0.1	6.9±0.1	7.6±0.1	3.0±0.1	0.4±0.05	8.0±0.1	3000
B4F	ø330	13.5±0.5	17.5±1	12.0±0.3	5.5±0.1	5.4±0.1	4.4±0.1	3.5±0.1	0.4±0.05	8.0±0.1	2000
32CS	ø330 ø180	9.5±0.5	13.5±1	8.5±0.3	3.5±0.1	2.8±0.1	3.6±0.1	2.6±0.1	0.25±0.05	4.0±0.1	5000/1500
5CCA, 5CCE	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.1	6.2±0.1	6.6±0.1	6.2±0.1	0.4±0.05	12.0±0.1	750
5CCD	ø330	17.5±0.5	21.5±1	16.5±0.3	7.5±0.1	6.2±0.1	6.6±0.1	5.7±0.1	0.4±0.05	12.0±0.1	1000
5CCL	ø330	17.5±0.5	21.5±1	16.5±0.3	7.5±0.1	6.2±0.1	6.6±0.1	5.2±0.1	0.4±0.05	8.0±0.1	1500
FSS	ø330	13.5±0.5	17.5±1	12.0±0.3	5.5±0.05	4.0±0.2	3.9±0.2	3.6±0.2	0.4±0.01	8.0±0.1	1000
FSW	ø330	13.5±0.5	17.5±1	12.0±0.3	5.5±0.05	5.5±0.2	5.4±0.2	3.6±0.2	0.4±0.05	8.0±0.1	1000
FST	ø330	13.5±0.5	17.5±1	12.0±0.3	5.5±0.05	5.5±0.2	5.4±0.2	3.6±0.2	0.4±0.1	8.0±0.1	1000
5CCS	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.05	6.2±0.2	6.6±0.2	4.4±0.2	0.4±0.1	8.0±0.1	2000
5CCB	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.05	6.2±0.2	6.6±0.2	4.9±0.2	0.4±0.1	8.0±0.1	1500
5CCF/Coverless	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.05	6.2±0.2	6.6±0.2	6.2±0.2	0.4±0.1	12.0±0.1	750
3DM	ø330	17.5±0.5	21.5±1	12.0±0.3	5.5±0.1	4.7±0.1	6.7±0.1	3.3±0.1	0.3±0.05	8.0±0.1	2000
D73C/F	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.05	7.8±0.2	7.8±0.2	3.8±0.2	0.4±0.1	12.0±0.1	1000
D74C/F	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.05	7.8±0.2	7.8±0.2	4.4±0.2	0.4±0.1	12.0±0.1	1000
D75C/F	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.05	7.8±0.2	7.8±0.2	5.4±0.2	0.4±0.1	12.0±0.1	1000
D75P	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.1	7.8±0.1	7.8±0.1	4.8±0.1	0.4±0.1	12.0±0.1	1000
D78C	ø330	25.5±0.5	29.5±1	24.0±0.3	11.5±0.1	7.8±0.1	7.8±0.1	8.4±0.1	0.4±0.1	16.0±0.1	500
B4QF	ø330	13.5±0.5	17.5±1	12.0±0.3	5.5±0.05	5.2±0.1	6.4±0.1	3.8±0.1	0.4±0.05	8.0±0.1	2000
R10F	ø330	25.5±0.5	29.5±1	24.0±0.3	11.5±0.1	10.0±0.1	11.5±0.1	5.8±0.1	0.4±0.05	12.0±0.1	1000
4FFH	ø330	33.5±0.5	37.5±1	32.0±0.3	14.2±0.1	14.0±0.1	21.9±0.1	6.1±0.1	0.4±0.05	20.0±0.1	500
3DF	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.1	4.7±0.1	6.8±0.1	3.5±0.1	0.3±0.05	8.0±0.1	2000
BLC10	ø330	25.5±0.5	29.5±1	24.0±0.3	11.5±0.1	12.7±0.1	11.0±0.1	5.4±0.1	0.4±0.05	16.0±0.1	750
FSV	ø330	25.5±0.5	29.5±1	24.0±0.3	11.5±0.1	4.0±0.1	11.2±0.1	3.3±0.1	0.4±0.05	8.0±0.1	1000
5CCSL	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.1	6.2±0.1	6.6±0.3	4.1±0.1	0.4±0.05	8.0±0.1	1000
4FFQS	ø330	25.5±0.5	29.5±1	24.0±0.3	11.5±0.1	14.5±0.1	14.4±0.1	6.1±0.1	0.4±0.05	20.0±0.1	500
10CA	ø330	25.5±0.5	29.5±1	24.0±0.3	11.5±0.1	10.8±0.1	10.4±0.1	3.6±0.1	0.4±0.05	16.0±0.1	1000
D10F	ø330	25.5±0.5	29.5±1	24.0±0.3	11.5±0.1	9.8±0.1	11.4±0.1	5.4±0.1	0.4±0.05	16.0±0.1	500
D73LC	ø330	17.5±0.5	21.5±1	16.0±0.3	7.5±0.1	7.8±0.1	7.8±0.1	3.4±0.1	0.4±0.05	12.0±0.1	1000
4DFA	ø330	25.5±1.5	00.0±0	24.0±0.3	11.5±0.1	14.0±0.1	13.0±0.1	5.4±0.1	0.4±0.05	16.0±0.1	500
4DFB	ø330	25.5±1.5	00.0±0	24.0±0.3	11.5±0.1	14.0±0.1	18.0±0.1	5.4±0.1	0.4±0.05	16.0±0.1	500
LL1005FH	ø180	9.0	11.4	8.0±0.2	3.5±0.05	0.6±0.1	1.1±0.1	1.0 Max	2.0±0.1	2.0±0.1	10,000
LL1608FH	ø180	10.0±1.5	00.0±0	8.0±0.3	3.5±0.05	1.1±0.2	1.9±0.2	2.0 max	0.2±0.05	4.0±0.1	4000
LL2012F	ø180	10.0±1.5	00.0±0	8.0±0.2	3.5±0.05	1.5±0.2	2.3±0.2	2.0 max	0.2±0.05	4.0±0.1	4000/3000

Cartridge for Automatic Insertion of Pin Type Coils and Filters

This form of packing is designed for the 5mm, 7mm and 10mm square, fixed coils and AM ceramic filters.

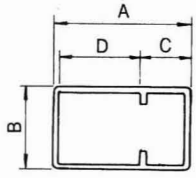


Coil Size	Applicable Type	Cartridge No.	EIA Type No*.	Form	Length	Dimensions (Unit: mm) A	B	C	D	Quantity (PCS)
5mm	5P, 5K	99-0188	LM120076H50	H	508	12.0	7.6	5.0	6.2	50 or 75
	5VUS, 5V(U)W, 5VNT	99-0189	LM163080H68	W	580	16.3	8.0	6.8	8.0	SINGLE: 90 DOUBLE:45
	5VLUS, 5VL(U)W	99-0250	LM151080H68	W	600	15.1	8.0	6.8	6.6	SINGLE: 100 DOUBLE:50
7mm	7P, 7PA	99-0181	LM202098H72	H	414	20.2	9.8	7.2	11.8	50
	7KM, MC134	99-0191	LM220098H75	H	414	22.0	9.8	7.5	13.1	50
	7PL, 7KL	99-0221	LM170098H67	H	414	17.0	9.8	6.7	9.3	50
	MC122	99-0249	LM183100H72	H	425	18.3	10.0	7.2	9.8	50
	7VS, 7VUS	99-0255	LM220098H72	H	414	22.0	9.8	7.2	14.1	50
	7VSW	99-0256	LM240114H72	H	508	24.0	11.4	7.2	15.8	25
	7PS	99-0345	LM202098H72	C	414	20.2	9.8	7.2	7.2	50
	MC119	99-0346	LM170100W68	W	435	17.0	10.0	6.8	9.2	50
10mm	10K, 10EZ (H)	99-0215	LM215128H75	H	565	21.5	12.8	7.5	12.7	50
	10PA	99-0277	LM220128H67	H	565	22.0	12.8	6.7	13.8	50
	MC120	99-0196	LM225134H75	H	580	22.5	13.4	7.5	13.0	50
	10PD	99-0341	LM240128H67	H	580	24.0	12.8	6.7	16.2	50
LC	APQ25	99-0309	LM335500H71	W	460	33.5	50.0	7.1	22.9	26
	LPFS31	99-0310	LM335400H71	W	460	33.5	40.0	7.1	21.6	30
Ceramic	CFM2, CFMS*	99-0198	LM205059H97	C	445	20.5	5.9	9.7	9.7(7.1)*	50
Material: Polycarbonate & Poly Vinyl Chloride			Tolerance		±1	±0.2	±0.2	±0.2	(±0.15)	

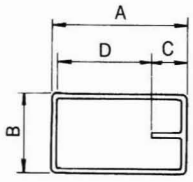
* EIA type name conforms to standards of the Electronic Industries Association. For other types not specified, please inquire.

Shape of Cross Section

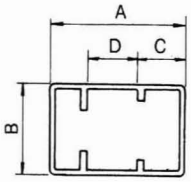
Type H



Type W



Type C



Notes:
When storing or handling the products, please pay special attention to the following:

(1) Products should be stored in environment free of dust and/or gaseous atmosphere containing chlorine, sulfur, etc.
(2) High temperatures above 60°C and high humidity conditions should be avoided.
(3) In order to prevent deformation of the cartridge, care should be taken to prevent application of heavy loads.
(4) The cartridge, including the stopper and packing materials, are re-usable and recycling is possible.

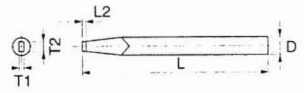
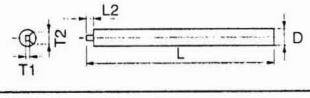
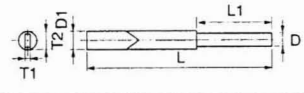
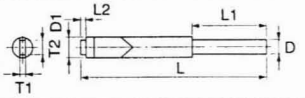
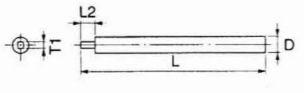
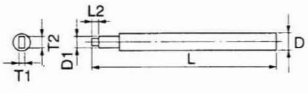
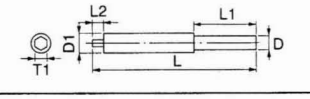
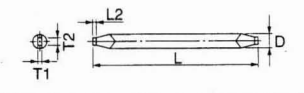
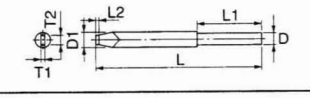
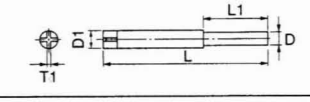
Tuning Tools

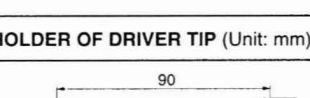
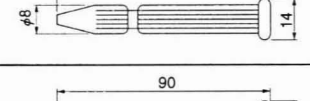
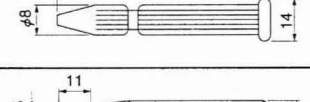
TOKO adjustable coils are tunable with either specific tools, such as the ones listed and described on this page, or as noted for the specific type, with small phillips (+) or blade (–) screwdrivers. A choice of plastic or metal handles are offered for some of the types.

Shown below are tuning tools for each TOKO type. Occasionally the correct tuning tool may be different from those indicated below. Please contact TOKO for the most appropriate tuning tools for your application.

CERAMIC DRIVER CHIP LIST

Coil	Tool for Coils Adjustment											
	Drive Tip (Unit: mm)										Holder	
	Tip No.	Fig.	T2	T1	L	L1	L2	D	D1	Material	Resin	Metal
5CBL	71-2043	6	0.85	0.55	25	—	0.6	2.4	1.9	Ceramic	71-1474	72-0298-25
5CE	71-2043	6	0.85	0.55	25	—	0.6	2.4	1.9	Ceramic	71-1474	72-0298-25
5A	71-1919	6	0.95	0.55	25	—	0.7	2.4	1.9	Ceramic	71-1474	72-0298-25
5K	71-1919	6	0.95	0.55	25	—	0.7	2.4	1.9	Ceramic	71-1474	72-0298-25
4K	71-1919	6	0.95	0.55	25	—	0.7	2.4	1.9	Ceramic	71-1474	72-0298-25
7KLS	71-1919	6	0.95	0.55	25	—	0.7	2.4	1.9	Ceramic	71-1474	72-0298-25
7KN	71-1325	2	1.3	0.55	25	—	0.9	2.4	—	Ceramic	71-1474	72-0298-25
7KS	71-1604	2	1.3	0.75	25	—	0.9	2.4	—	Ceramic	71-1474	72-0298-25
7KM	71-1604	2	1.3	0.75	25	—	0.9	2.4	—	Ceramic	71-1474	72-0298-25
4F	71-1750	1	1.95	0.47	25	—	1.0	2.4	—	Ceramic	71-1474	72-0298-25
4P	71-1472	2	1.6	0.5	25	—	0.7	2.4	—	Ceramic	71-1474	72-0298-25
5CD	71-1813	2	1.5	0.4	25	—	0.4	2.4	—	Ceramic	71-1474	72-0298-25
5CDL	71-1813	2	1.5	0.4	25	—	0.4	2.4	—	Ceramic	71-1474	72-0298-25
7ES	71-1268-06	1	2.5	0.4	30	—	1.0	3.5	—	Metal		72-0298-35
7PLA	71-1268-03	8	2.6	0.5	30	—	1.0	3.5	—	Metal		72-0298-35
5S	71-1468	3	2.6	0.5	25	10	—	2.4	2.6	Ceramic	71-1474	72-0298-25
5M	71-1468	3	2.6	0.5	25	10	—	2.4	2.6	Ceramic	71-1474	72-0298-25
5KP	71-1468	3	2.6	0.5	25	10	—	2.4	2.6	Ceramic	71-1474	72-0298-25
5P	71-1468	3	2.6	0.5	25	10	—	2.4	2.6	Ceramic	71-1474	72-0298-25
5V	71-1607	4	2.6	0.5	25	10	0.5	2.4	3.6	Ceramic	71-1474	72-0298-25
MC108	71-1919	6	0.95	0.55	25	—	0.7	2.4	1.9	Ceramic	71-1474	72-0298-25
MC110	71-1605	7	6C	1.9	25	10	6	2.4	3.6	Ceramic	71-1474	72-0298-25
MC111	71-1604	2	1.3	0.75	25	—	0.9	2.4	—	Ceramic	71-1474	72-0298-25
MC115	71-1604	2	1.3	0.75	25	—	0.9	2.4	—	Ceramic	71-1474	72-0298-25
MC116	71-1604	2	1.3	0.75	25	—	0.9	2.4	—	Ceramic	71-1474	72-0298-25
MC119	71-1604	2	1.3	0.75	25	—	0.9	2.4	—	Ceramic	71-1474	72-0298-25
MC120	71-1605	7	6C	1.9	25	10	6	2.4	3.6	Ceramic	71-1474	72-0298-25
MC122	71-1325	2	1.3	0.55	25	—	0.9	2.4	—	Ceramic	71-1474	72-0298-25
MC128	71-1605	7	6C	1.9	25	10	6	2.4	3.6	Ceramic	71-1474	72-0298-25
MC130	71-1605	7	6C	1.9	25	10	6	2.4	3.6	Ceramic	71-1474	72-0298-25
MC131	71-1470	5	4C	1.4	25	—	3	2.4	—	Ceramic	71-1474	72-0298-25
MC134	71-1325	2	1.3	0.55	25	—	0.9	2.4	—	Ceramic	71-1474	72-0298-25
MC136	71-1325	2	1.3	0.55	25	—	0.9	2.4	—	Ceramic	71-1474	72-0298-25
MC137	71-1604	2	1.3	0.75	25	—	0.9	2.4	—	Ceramic	71-1474	72-0298-25
MC138	71-1604	2	1.3	0.75	25	—	0.9	2.4	—	Ceramic	71-1474	72-0298-25
MC139	71-1919	6	0.95	0.55	25	—	0.7	2.4	1.9	Ceramic	71-1474	72-0298-25
MC140	71-1604	2	1.3	0.75	25	—	0.9	2.4	—	Ceramic	71-1474	72-0298-25
MC141	71-1608	6	0.8	0.5	25	—	0.6	2.4	1.8	Ceramic	71-1474	72-0298-25
MC152	71-2043	6	0.85	0.55	25	—	0.6	2.4	1.9	Ceramic	71-1474	72-0298-25
7P+	71-1285-01	10	—	0.6	25	10	—	2.4	4.0	Metal	71-1474	72-0298-25
7ES+	71-1285-02	10	—	0.6	25	10	—	2.4	3.6	Metal	71-1474	72-0298-25
7TS+	71-1285-03	10	—	0.6	25	10	—	2.4	3.4	Metal	71-1474	72-0298-25
10PA+	71-1285-04	10	—	0.7	25	10	—	2.4	4.7	Metal	71-1474	72-0298-25
10EZ+	71-1285-05	10	—	0.5	25	10	—	2.4	4.0	Metal	71-1474	72-0298-25
HEX	71-1605	7	6C	1.9	25	10	6	2.4	3.6	Ceramic	71-1474	72-0298-25
BOX 1.5	71-1470	5	4C	1.4	25	—	3	2.4	—	Ceramic	71-1474	72-0298-25
BOX 1.1	71-1469	5	4C	1.0	25	—	3	2.4	—	Ceramic	71-1474	72-0298-25
5CCS	71-1991	4	2.6	0.5	25	10	0.4	2.4	3.6	Ceramic	71-1474	72-0298-25
5CCB	71-1919	6	0.95	0.55	25	—	0.7	2.4	1.9	Ceramic	71-1474	72-0298-25
5CCF	71-1919	6	0.95	0.55	25	—	0.7	2.4	1.9	Ceramic	71-1474	72-0298-25
5CCD	71-1991	4	2.6	0.5	25	10	0.4	2.4	3.6	Ceramic	71-1474	72-0298-25
5CCE	71-1919	6	0.95	0.55	25	—	0.7	2.4	1.9	Ceramic	71-1474	72-0298-25

SHAPE OF DRIVER TIP	Fig.
	1
	2
	3
	4
	5
	6
	7
	8
	9
	10

HOLDER OF DRIVER TIP (Unit: mm)	PART No.
	72-0298-25
	72-0298-35
	71-1474

Application Notes

The following listings are provided to help you find the appropriate coils and filters that compliment certain IC's. Additional listings are developed over time so if you do not find matching devices to IC's you are using, please contact your nearest TOKO sales office. Some of the devices listed in this section are not listed on proceeding pages as "Standard Parts", but are available through your local TOKO sales representative or an authorized TOKO distributor.

Motorola Consumer IC's

Component Type	TOKO Type	TOKO Part Number	Notes
MC1330A Low Level Video Detector			
L1	MC120	E526HNSA-100059	0.41 µH
MC1350 Monolithic IF Amplifier			
L1	MC120	E526HNSA-100059	0.41 µH
T1	10K	WKEACA-60337DX	
T1	10K	WKEC-60338ADB	
MC1374 TV Modulator Circuit			
L1	MC120	E526HNA-100297	
L2	10K	BTKANS-9439HM	
L3, L4	MC122	E528DNAS-100082	
MC1377 Color TV RGB to PAL/NTSC Encoder and MC13077 Advanced PAL/NTSC Encoder			
Y-Delay Line	5VFNP	H321LNP-1436PBAB	400 ns delay line
Chroma Bandpass	10NSF	166NNF-10264AG	10mm transformer
NTSC BPF	5VUS	H286BAIS-6276DAD	3.58 MHz BPF
PAL BPF	5VUS	H286BAIS-4963DAD	4.43 MHz BPF
MC1378 Color TV Composite Video Overlay Synchronizer			
Y-Delay Line	5VFNP	H321LNP-1436PBAB	400 ns delay line
Chroma Bandpass	10NSF	166NNF-10264AG	10mm transformer
NTSC BPF	5VUS	H286BAIS-6276DAD	3.58 MHz BPF
PAL BPF	5VUS	H286BAIS-4963DAD	4.43 MHz BPF
300 nH Choke	7KL	291CC-T1166AVF	14.3 MHz (7mm)
300 nH Choke	10K	TKXC-T1262AVF	14.3 MHz (10mm)
300 nH Choke	7KL	291CCS-T1185AVF	17.78 MHz (7mm)
300 nH Choke	10K	BTKXCS-T1278AVF	17.78 MHz (10mm)
300 nH Choke	7KL	291CCS-T1186AVF	28.86 MHz (7mm)
300 nH Choke	10K	BTKXCS-T1279AVF	28.86 MHz (10mm)
Resonator (NTSC)	CRHF	DCRHF4.03	4.03 MHz Ceramic Resonator
Quad Detector	7KM	MF292CNS-T1082Z	In place of ceramic
MC13077 Advanced PAL/NTSC Encoder			
Y-Delay Line	5VFNP	H321LNP-1436PBAB	400 ns delay line
Y-Delay Line	5VFNT	H319LNM-3828TDD	400 ns delay line, low cost
Y-Delay Line	4FT	H356LNM-7254	400 ns delay line, SMD
NTSC BPF	5VUS	H286BAIS-6276DAD	3.58 MHz BPF
PAL BPF	5VUS	H286BAIS-4963DAD	4.43 MHz BPF
NTSC BPF	4FUS	H354BAI-1425DAD	3.58 MHz BPF, SMD
PAL BPF	4FUS	H354BAI-1748DAD	4.43 MHz BPF, SMD
MC44301 High Performance Color TV IF and MC44302 Advanced Multistandard TV Video/Sound IF			
L2	10K	TKANS-T1390ADP	
MC34010P, MC34011P Electronic Telephone Dialer			
500 KHz Resonator	CRK	CRK500	
MC13020 C-Quam AM Stereo Decoder			
Ceramic VCO	CRHF	B1CRHF3.60	
L-C VCO	7KMM	MF292BC-1349Z	In place of ceramic
T	10K	BMTKACS-34549XX	
MC13022 Advanced Medium Voltage AM Stereo Decoder			
	7P	A7NRES-T1370Y	450 KHz IF
Ceramic VCO	CRHF	B1CRHF3.60	
L-C VCO	7KMM	MF292BC-1349Z	In place of ceramic

continued on next page

Motorola Consumer IC's (continued)

Component Type	TOKO Type	TOKO Part Number	Notes
MC13024 Low Voltage AM Stereo Receiver			
T1	7P	A7BRS-10592X	Input Transformer
T2	7P	A7BRS-T1342AIX	Local Oscillator
T3	7P	7MCS-T1464X	Mixer Output
T5	7P	7MCS-T1463BS	IF Output
T6	7KL	MF291ACS-3688VL	Reference Oscillator
MC13025 Electronic Tuned Radio Front End			
L1	7PA	126ANS-7594HM	Antenna
T1,T2	7P	A7BRS-11081RS	RF Input
T3	7PH	A119ANS-19035RS	VCO
T4	7P	A7NRES-11148N or	450 KHz IF, Standard
T4	7P	A7NRES-T1532N	450 KHz IF, High Gain

Motorola Communication IC's

Component Type	TOKO Type	TOKO Part Number	Notes
MC2831A Low Power FM Transmitter System			
OCS Coil	7PA	126ANS-T1072Z	20 mH
MC2833 Low Power FM Transmitter System			
	7KMM	292SNS-T1368Z	0.22 µH
	7KMM	292KNS-T1375Z	3.3 µH
MC3335 Low Power Dual Conversion FM Receiver			
Quad Coil[1]	7P	7MCS-8128Z	7mm
	5CCD	614AG-0145GW	SMD
CF	CFSK	SK107M1-AO-10	10.7 MHz, 280 KHz B.W.
MC3356 Wide Band FSK Receiver			
L1	MC120	E526HNSA-100059	0.41 µH
CF	CFSK	SK107M1-AO-10	10.7 MHz, 280 KHz B.W.
MC3357 Low Power FM IF			
Quad Coil	7P	A7BRCS-T1117Z	
MC3359 High Gain Low Power FM IF and MC3361B Low Power FM IF			
Quad Coil[1]	7P	7MCS-8128Z	7mm
	5CCD	614AG-0145GW	SMD
MC3362/MC3363 Low Power Dual Conversion FM Receivers			
Quad Coil (LC1)[1]	7P	7MCS-8128Z or	7mm
	5P	5PLC-2630BGT	5mm
	5CCD	614AG-0145GW	SMD
FL2	CFSK	SK107M1-AO-10	10.7 MHz
1ST LO	MC-120	E526HNSA-100059	0.41 µH
Osc Coil	7KMM	292SNS-T1371Z	0.68 µH
Mixer Input	7KMM	292SNS-T1370Z	0.47 µH
T1 (fig 11)	7KMM	292ZCS-T1457N	
T2 (fig 12)	7KMM	292ZCS-T1458Z	
MC3367 Low Voltage Single Conversion FM Receiver			
Quad Coil (LC1)[1]	7P	7MCS-8128Z or	7mm
	5CCD	614 AG-0145GW	SMD
L1, 10.7 MHz	7KMM	292KNS-T1377Z	6.8 µH
L1, 45 MHz	7KMM	292SNS-T1371Z	0.68 µH
L1, 72 MHz	7KMM	292SNS-T1368Z	0.22 µH

Motorola Communication IC's (continued)

Component Type	TOKO Type	TOKO Part Number	Notes
MC3371/MC3372 Low Power FM IF			
Quad Coil[1]	7P	7MCS-8128Z or	7mm
	5CCD	614AG-0145GW	SMD
L1	10K	BTKANS-9441HM or	6.8 µH, 10mm
	7KMM	292CNS-T1050Z	6.8 µH, 7mm
49.7 MHz Application			
L1	MC-138	E544EN-100026	0.2 µH
L2	MC-130	E536HN-60060	0.62 µH
MC3373 Remote Control Amp/Detector			
40 KHz Tank	10PA	CANS-4612Z or	5.0 mH, 10mm
	7PA	126LNS-6285Z	5.0 mH, 7mm
MC13055 Wideband FSK Receiver			
L1	MC120	E526HNA-100301	280 nH
L2	MC120	E526HNA-100079	380 nH
MC13135, MC13136 FM Communication Receiver			
Quad Coil[1]	7P	7MCS-8128Z or	7mm
	5CCD	614AG-0145GW	SMD
	7KMM	292SNS-1371Z	0.68 µH
	MC138	E544EN-100026	0.20 µH
MC13155 Wideband IF System			
For Quad Circuit	MC122	E528DNAS-100083	0.260 µH
For Quad Circuit	MC122	E528DNAS-100082	0.220 µH
	7KMM	292SNS-T1365Z	0.080 µH
MC13156 Wideband IF Systems			
Quad Coil[1]	7P	7MCS-8128Z	455KHz, 7mm
	5CCD	614AG-0145GW	455KHz, SMD
Quad Circuit	7KMM	292KNS-T1373Z	10.7 MHz, 1.5 µH
Quad Coil	7KM	292BCS-3501Z	10.7 MHz
CF	CFSK	SK107M5-AO-10X	10.7 MHz. 110 KHz, B.W.
MC13158 Wideband IF System			
Quad Circuit	7KMM	292KNS-T1373Z	10.7 MHz, 1.5 µH
Quad Coil	7KM	292BCS-3501Z	10.7 MHz
CF	CFSK	SK107M1-AO-10	10.7 MHz, 280 KHz, B.W.
MC13173 Infrared Integrated Transceiver System			
Quad Circuit	7KMM	292KNS-T1372Z	10.7 MHz, 1.0 µH
L1	7P	A7BRS-T1040Z	100 µH
L2	7PH	A119ANS-T1042Z	56 µH
CF	CFSK	SK107MA-AO-10	10.7 MHz, 360 KHz, B.W.
MC13175, MC13176 UHF FM/AM Transmitter			
For Xtal	7KMM	292KNS-T1017Z	0.82 µH, (fig. 1,2,21)
Ocs Tank	MC-138	E544EN-100025	0.165 µH, (fig. 1,21)
Ocs Tank	MC-138	E544EN-100023	0.098 µH, (fig. 2)
For Xtal	7KMM	292KNS-T1377Z	6.8 µH, (fig. 17A)
Ocs Tank	MC-122	E528SN-100062	0.146 µH, (fig. 17A,17B)
RFC1	MC-122	E528SN-100063	0.190 µH (fig. 17A)
Balun	B5FL	617DB-1006 or	
	B4F	616BD-1006	

Footnotes: 1 Toko Type 10EZ, Quadrature Coil is no longer recommended, please replace with Toko 7P, 7mm type or Toko 5CCD surface mount type.

National Semiconductor IC's

Component Type	TOKO Type	TOKO Part Number	Comments
LM1863 AM Radio System for ETR			
T1	5P	332FC-T1035YRT	
T2, T3	7P	7RTS-T1295CI	
T4	7P	7NRES-T1266EK	
T5	7P	7NRES-T1099AAG	
T6	7P	7TRS-T1098AO	
Resonator	CRK	CRK450	
Varactor	VCD	KV1235Z	
LM1865/LM1965/LM2065 Advanced FM IF Systems			
T1	10K	BKAC-K2318HM	
CF1, CF2	CFSK	SK107M1-AE-10	
LM1866 Low Voltage AM/FM Receiver			
T1	10K	BKAC-K2318HM	
T2	7PU	159GC-A3785HM	
T4, T5	10EZ	RWO-6A5105BM	
CF1	CFMA	CFMA-003	
Polyvaricon	PVC	QT-22124	
LM1868 AM/FM Radio System			
C1	PVC	FL22124	
T1	10K	BKAC-K2318HM	
T2	7PU	159GC-A3785HM	
L2	10EZ	RWO-6A5105BM	
CF1	CFMA	CFMA-003	
LM1871 RC Encoder/Transmitter			
	MC117	E523LN-7210019	
T1	10EZ	RMC-202313N0	
T1	7P	7MC-202313NO (7 mm)	
T2	10EZ	RMC-402503N0	
T2	7P	7MC-402503NO (7 mm)	
	10K	BKXN-K4636BJF	
	10K	BKEN-K4028DZ	
	10K	KEN-K4635BJE	
	10EZ	RAN-10A6729EK	
LM1872 Radio Control Receiver/Decoder			
L1	10K	BKEN-K4028DZ	
T1	10EZ	RMC-202313NO	
T1	7P	7MC-202313NO (7 mm)	
T2	10EZ	RMC-402503NO	
T2	7P	7MC-402503NO (7 mm)	
L1	10K	KXNA-K4434DZ	
T1	10EZ	RMC-502182NO	
T1	7P	7MC-502182NO (7 mm)	
T2	7P	7MC-502182NO (7 mm)	
L1	7P	7MC-202353NO (7 mm)	
T2	7P	7MC-402503NO (7 mm)	
L1	10K	BKEN-K4857DZ	
LM3089 FM Receiver IF System			
	10K	BKAC-K2318HM	
LM3189 FM IF System			
	10K	BKACS-K586HM	
LM3361 Low Voltage/Power Narrow Band FM IF System			
	10EZ	RMC-2A6597HM	
LM3820 AM Radio System			
L0, L2	10EZ	RW0-6A6255N	
T1	10EZ	RRC-3A6426N	
T2	10EZ	RRC-3A6427A	
T3	10EZ	RZC-1A6425A	

National Semiconductor IC's (cont.)

Component Type	TOKO Type	TOKO Part Number	Comments
LM1880 No Holds Vertical/Horizontal			
	CRK	CRK503	
LM2889 TV Video Modulator			
	10K	KAC-K5674HM	
LM1812 Ultrasonic Transceiver			
L6	12VXA	719VXA-A018YSU	
L1	10PA	CAN-1A901HM	
L6	12VXA	719VXA-A017A0	
L1	10PA	CLN-2A900HM	
LM1893/LM2893 Carrier Current Transceivers			
T1	12VXA	719VXA-T1060YUK	125kHz
T2	12VXA	719VXA-T1061YUK	50kHz
T3	10EZ	RZNS-T1147YUK	300kHz
LM1894 Dynamic Noise Reduction System			
L8	10PA	CAN-1A185HM	
LMX2240 IF Receiver for DECT			
Tank Circuit	5CCE	A638AH-0294	
1MHz LPF	4FUS	H354LAI-2484DDD	

Philips/Signetics RF Communication ICs

Component Type	TOKO Type	TOKO Part Number	Comments
NE/SA604A and NE/SA614A Low Power FM IF System			
F2	7P	7MCS-8128Z or	455 KHz Quad Coil
	5CCD	614AG-0145GW	455 KHz Quad Coil
NE/SA605 and NE/SA615 High Performance Low Power Mixer FM IF System			
45 MHz Application 1			
IFT1	5CCD	614AN-9271Z	270 µH (replaces 5CD)
L1			300 nH (replaces 5CB)
L2	7KMM	292CNS-T1038Z	0.80 µH
45 MHz Application 2			
IFT1	7P	7MCS-8128Z	455 KHz Quad Coil (replaces 10EZ)
L1	MC120	E526HNA-100297	140 nH (replaces Coilcraft)
L2	7KMM	292CNS-T1046Z	3.3 µH
10.7 MHz Application, AN1996			
FLT1	CFSK	SK107M1-AO-10	10.7 MHz, 280 KHz BW (replaces Murata)
FLT2	CFSK	SK107M1-AO-10	10.7 MHz, 280 KHz BW (replaces Murata)
NE/SA606 and NE616 Low Voltage High Performance Mixer IF System			
45 MHZ Application 1, leaded			
IFT1	7P	7MCS-8128Z	455 KHz tank (replaces 10EZ)
L1	MC120	E526HNA-100297	140 nH (replaces Coilcraft)
L2	7KMM	292CNS-T1046Z	3.3 µH
45 MHZ Application 2, surface mount			
IFT1	5CCD	614AN-9331Z	330 µH (replaces 5CD)
L1	5CCE	A638AN-0158Z	330 nH (replaces 5CB)
L2	5CCE	A638AN-0165Z	1.2 µH
SA607 and SA617 Low Voltage High Performance Mixer FM IF System			
45 MHZ Application 1, leaded			
IFT1	7P	7MCS-8128Z	455 KHz tank (replaces 10EZ)
L1	MC120	E526HNA-100297	140 nH (replaces Coilcraft)
L2	7KMM	292CNS-T1046Z	3.3 µH
45 MHZ Application 2, surface mount			
IFT1	5CCD	614AN-9331Z	330 µH (replaces 5CD)
L1	5CCE	A638AN-0158Z	330 nH (replaces 5CB)
L2	32CS	380LB-1R2K	1.2 µH (replaces Coilcraft)

Philips/Signetics RF Communication ICs (continued)

Component Type	TOKO Type	TOKO Part Number	Comments
SA608 Low Voltage High Performance Mixer FM IF System			
45 MHZ Application 1, leaded			
IFT1	7P	7MCS-8128Z	455 KHz tank (replaces 10EZ)
L1	MC120	E526HNA-100297	140 nH (replaces Coilcraft)
L2	7KMM	292CNS-T1038Z	0.8 µH
45 MHZ Application 2, surface mount			
IFT1	5CCD	614AN-9331Z	330 µH (replaces 5CD)
L1	5CCE	A638AN-0158Z	330 nH (replaces 5CB)
L2	32CS	380LB-1R2K	1.2 µH (replaces Coilcraft)
NE/SA624 High Performance Low Power FM IF System with High Speed RSSI			
IFT1	7P	7MCS-8128Z	455KHz tank (replaces 10EZ)
NE/SA625 and NE/SA6276 High Performance Low Power FM IF System with High Speed RSSI			
45 MHZ Application			
IFT1	7P	7MCS-8128Z	455 KHz tank (replaces 10EZ)
L1	MC120	E526HNA-100297	140 nH (replaces Coilcraft)
L2	7KMM	292CNS-T1038Z	0.8 µH
TDA5051 Home Automation Modem			
Power Line Isolation Transformer	12VX	707VX-T1002N	

Philips/Signetics Video ICs

Component Type	TOKO Type	TOKO Part Number	Comments
SAA7188 Digital Video Encoder			
Post D/A LPF	5VST	H288LSLS-14653	Lower grad
Post D/A LPF	5FVP	TH317LTOS-2919PGAF	Mid-grade
Post D/A LPF	5VZS	603F-1011	High grade
SAA7199B Digital Video Encoder			
6 MHz LPF	5VUS	H286LAIS-14709	For PC application
4.2 MHz LPF	5VST	H288 LSLS-14653 and A287ENKS-14654	For Digital CATV application Sin x/x function with LPF
TDA8501 PAL/NTSC Encoder			
NTSC y-delay line	5VFNP	TH321LNP-3830	
PAL y-delay line	5VFNQ	TH320LNO-3829	
TDA8708 and Video Analog Input Interface			
5MHz LPF	5VFT	H315LNLS-2722TBD	

Plessey IC's

Component Type	TOKO Type	TOKO Part Number	Comments	
SL6639 FSK Direct Conversion Receiver				
1:1 Transformer	5CCE	A638AN-0234	0.11µH nominal	(Replaces 5CE)

TOKO DC-DC CONVERTER FEATURE GUIDE

TOKO Part Number	Output Voltage	Output Current	Input Voltage Range		Sine Wave	Package	TOKO Transformer	TOKO Inductor
TK11811M	1.9 V 2.8 V	5 mA 10 mA	0.6 V	Vo		SOT-23L		395KN-0369AQ 395KN-0370UG
TK11812M	1.5 V to 15 V	35 mA	0.6 V	14.0 V		SOT-23L		395KN-0369AQ
TK11816M	7.2 V 12.8 V	6.7 mA 8.0 mA	1.1 V	6.0 V 10.0 V		SOT-23L		395GN-0091IB
TK11817	9.3 V 16.8 V	6.2 mA 7.0 mA	1.1 V	8.0 V 15.0 V		SOT-23L		395GN-0091IB
TK11818M	20.4 V 28.8 V	6.0 mA 5.0 mA	1.1 V	18.0 V		SOT-23L		395GN-0091IB
TK11819M	24.0 V 32.0 V	5.0 mA 4.0 mA	1.1 V	18.0 V		SOT-23L		395GN-0091IB
TK11822M	7.4 V	430 µA	1.0 V	5.0 V	YES	SOT-23L	5CDM-658BM-1085	
TK11823M	13.9 V	250 µA	1.0 V	5.0 V	YES	SOT-23L	5CDM-658BM-1085	
TK11830M	-0.5 to -12.5 V	100 mA	2.5 V	15.0 V		SOT-23L		646CY-471M
TK65025	3.0 V	15 mA 50 mA	0.9 V 1.5 V	3.0 V		SOT-23L		3DF, D73 or D75

PROTOTYPING KITS

Kit Name	Contents	Part Number
LL1005-FH - Multilayer Chip Inductors	Includes 21 part numbers, 10 pieces each. Inductance range of 1.0 - 47nH. Inductance tolerances up to 10%.	SPK-LL1005-1996
LL1608-FH - Multilayer Chip Inductors with High Q	Includes 24 part numbers, 10 pieces each. Inductance range of 1.2 - 100nH. Inductance tolerances up to 10%.	SPK-LL1608FH-96
LL1608-FH 5% - Multilayer Chip Inductors with 5% Tolerance	Includes 24 part numbers, 10 pieces each. Inductance range of 1.2 - 100nH. Inductance tolerances up to 5%.	SPK-LL1608FH-5%
LL2012 - Multilayer Chip Inductors	Includes 30 part numbers, 10 pieces each. Inductance range of 1.8 - 470nH. Inductance tolerances up to 10%.	SPK-LL2012-1993
LL2012 5% - Multilayer Chip Inductors with 5% Tolerance	Includes 30 part numbers, 10 pieces each. Inductance range of 1.8 - 470nH. Inductance tolerances up to 5%.	SPK-LL201J-1994
PTL2012-F - Photolithographic Chip Inductors	Includes 20 part numbers, 10 pieces each. Inductance range of 1.0 - 39nH. Inductance tolerances up to 3%.	SPK-PTL2012F-97
FSLU2520 - Wirewound Chip Inductors	Includes 53 part numbers, 10 pieces each. Inductance range of 10nH - 220µH.	SPK-FSLU-1996
FSLP2520 - Wirewound Chip Inductors	Includes 11 part numbers, 10 pieces each. Inductance range of 1nH - 47µH.	SPK-FSLP-1997
D7 - SMD Fixed Inductors, types D73C and D75F	Includes 43 part numbers, 2 pieces each. Inductance ranges of 1 - 100uH (with ferrite shield) and 3.3 - 470uH (unshielded).	SPK-D7-1994
3DF - SMD DC Chokes	Includes 24 part numbers, 4 pieces each. Inductance range of 1 - 270uH.	SPK-3DF-1994
32CS - SMD Inductors	Includes 53 part numbers, 5 pieces each. Inductance range of 0.01 - 220uH.	SPK-32CS-1990
5mm Coils - Types 5K, 5PH and 5P	Includes 43 part numbers, 2 pieces each. Inductance ranges of .08µH - 1.0µH (5K type), 1.0 - 40MHz (5PH type) and 30uH - 1mH (5P type).	SPK-5MM-1990
10mm Coils - Types 10K, 10PA and 10EZ	Includes 68 part numbers, 2 pieces each. Inductance ranges of 80nH - 10uH (10K), 1.0 - 56mH (10PA) and 4.7uH - 1.8mH (10EZ).	SPK-10-1987
7mm Coils - Types 7KMM, 7P and 7PA	Includes 61 part numbers, 2 pieces each. Inductance ranges of .08 - 82uH (7KMM), 4.7 - 330uH (7P) and 1.0 - 22mH (7PA).	SPK-07-1987
Molded Coils - Types MC134, MC138, MC139 and MC141	Includes 126 part numbers, 1 piece each. Inductance ranges of .03 - .68uH (MC134), .027 - .240µH (MC138), .015 - .134uH (MC139) and .013 - .350uH (MC141)	SPK-MC-1987
3336/36CS - SMD Autoplaceable Air Coils	Includes 9 part numbers, 10 pieces each. Inductance range of 6.8 - 49.8nH.	SPK-3336CS-1993
5mm SMD Coil - Types 5CCE and 5CCD	Includes 54 part numbers, 2 pieces each. Inductance ranges of 68 - 2200nH (5CCE) and 1.8 - 1000uH (5CCD).	SPK-5SMD-1993
Leaded Fixed Inductors - Types 8RBS and 8RHB	Includes 58 part numbers, 2 pieces each. Inductance ranges of 0.1 - 15mH (8RBS) and 1.0uH - 1.0mH (8RHB).	SPK-8RBS-1991

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_____ AM ceramic filters, SMD
_____ AM RF tuning unit coils
_____ Antenna duplexors
_____ Audio LC filters
_____ Balun transformers
_____ Bias OSC coils
_____ Chip inductors
_____ Ceramic oscillators
_____ Dielectric filters
_____ Fixed inductors
_____ Fixed inductors for surface mounting
_____ FM ceramic filters
_____ FM discriminators
_____ Helical filters, leaded
_____ Helical filters for surface mounting
_____ LC filters for HDTV and VCRs
_____ LC filters for multimedia
_____ LC filters for surface mounting
_____ Molded coils
_____ Molded coils for surface mounting
_____ Phase shifters
_____ RF LC filters
_____ Variable coils
_____ Variable coils for surface mounting

Specify a particular part if possible:

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__ AM ceramic filters, leaded _____
__ AM ceramic filters, SMD _____
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__ Antenna duplexors _____
__ Audio LC filters _____
__ Balun transformers _____
__ Bias OSC coils _____
__ Chip inductors _____
__ Ceramic oscillators _____
__ Dielectric filters _____
__ Fixed inductors _____
__ Fixed inductors for surface mounting _____
__ FM ceramic filters _____
__ FM discriminators _____
__ Helical filters, leaded _____
__ Helical filters for surface mounting _____
__ LC filters for HDTV and VCRs _____
__ LC filters for multimedia _____
__ LC filters for surface mounting _____
__ Molded coils _____
__ Molded coils for surface mounting _____
__ Phase shifters _____
__ RF LC filters _____
__ Variable coils _____
__ Variable coils for surface mounting _____

TOKO Part No. Prefix	TOKO Type	Page No.
A119ANS-	7P(HF)	81
A257BLT-	ABW07	162
A257BLV-	ABW07	139,140
A329LBIS-	5VHS	161
A330LDKS-	5VHW	161
A353TCH-	4FS	132
A355BNK-	4FW	132
A356BTL-	4FT	132
A375LAI-	5FS(LPF)	160
A375NCG-	5FS	160
A638AN-	5CCE	41
A682AY	3DF	61
A682AE	3DF	61
A814AY	D10F	72
A823LY	8RHT2	114
A7BRS-	7P	80
ACFM3-	CFM3	200
ACFA-	CFA	198
ACFMD-	CFMD	204
ACFML-	CFML	210
ACFMP-	CFMP	210
ACFMR-	CFMR	201
ACFMZ-	CFMZ	211
ACFMM2-	CFMM2	202
ACFMM3-	CFMM3	202
AECFM2	ECFM	192
AECFM3	ECFM	192
AECFM4	ECFM	194
AECFM5	ECFM	194
ALFC	LFC	205
ALFCM	LFCM	205
ALFY	LFY	206
ALFYM	LFYM	206
ACFMM4-	CFMM4	203
ACFMM6-	CFMM6	203
AHCFM2-	CFM2	200
A823LY-	8RHT2	114
B4QF-	B4QF	183
BCFA-	CFA	198
BCFAZ-	CFAZ	207
BKTANS-	10K	92
BLFC	LFC	205
BLFCM	LFCM	205
BLFY	LFY	206
BLFYM	LFYM	206
BTKAC-	10K(IC)	93
BTKANS-	10K	92,93
BTKENS-	10K	92
BTKXNS-	10K	92
CDF107B-	CDF	227
CFM8-	CFM8	199
CFMA-	CFMA	208
CFMQ-	CFMQ	212
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